



AMERICAN OSTEOPATHIC
BOARD OF FAMILY PHYSICIANS

IN-SERVICE EXAM

—produced and administered by—



AMERICAN COLLEGE
OF OSTEOPATHIC
FAMILY PHYSICIANS

2024 IN-SERVICE EXAMINATION

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1. A 53-year-old woman presents to the office with the concerns of fever and headache that have been worsening over the past several weeks. On further questioning, she admits to pain in her jaw and several instances of sudden darkening of her vision. On examination, her overall condition is unremarkable except for a tender, thickened, nonpulsatile temporal artery. You quickly decide to
 - A. treat her with high-dose steroids and order a biopsy of the temporal artery
 - B. order a CT scan with contrast to rule out cerebral ischemia with ocular movement
 - C. order an erythrocyte sedimentation rate, antinuclear antibody test, and complete blood count and recommend an ophthalmology consultation
 - D. order a stat temporal artery biopsy, erythrocyte sedimentation rate, and complete blood count and begin steroid therapy if the biopsy results are positive
 - E. treat her with low-dose steroids until test results are available

2. A 63-year-old man who works as a plumber presents for follow-up of recently diagnosed type 2 diabetes. He has a strong family history of coronary artery disease. His father died from a myocardial infarction at age 48. His blood pressure is 140/90 mmHg. Physical examination findings are normal. Laboratory studies reveal a BUN level of 15 mg/dL (reference range: 6-20 mg/dL) and a creatinine level of 0.90 mg/dL (reference range: 0.62-1.10 mg/dL). The current recommendation regarding urine screening in this patient is to provide
 - A. no testing unless renal insufficiency develops
 - B. annual testing with standard urine dipstick beginning 5 years after diagnosis
 - C. annual testing with standard urine dipstick beginning at the time of diagnosis
 - D. annual testing for microalbuminuria beginning at the time of diagnosis
 - E. annual testing for microalbuminuria beginning 5 years after diagnosis

3. A 44-year-old woman with obesity presents with paresthesia of the left lateral thigh for the past few weeks. She denies any history of trauma or overuse. Physical examination reveals normal leg strength, normal reflexes, and no skin rash. The only significant finding is subjective dysesthesia in the distribution of the lateral femoral cutaneous nerve. The most appropriate next step for this patient is to
 - A. advise her to wear loose-fitting clothes
 - B. perform electromyography
 - C. perform an MRI
 - D. initiate therapy with gabapentin (Neurontin®)
 - E. initiate therapy with ibuprofen (Motrin®)

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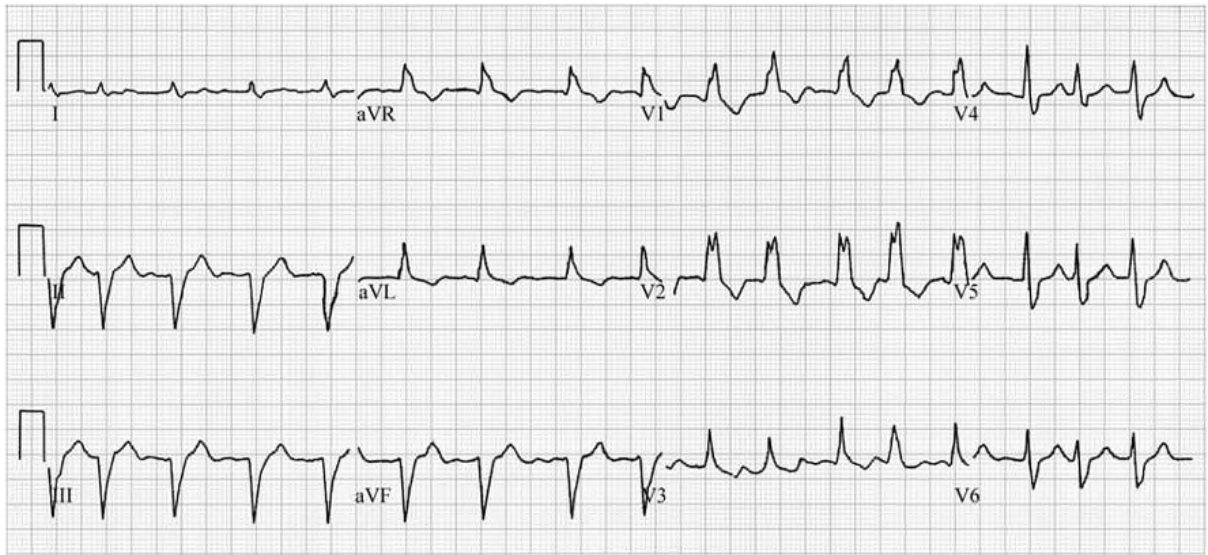
4. A 42-year-old man presents for a physical examination prior to starting an exercise program. He is 1.8 m (5'10") tall, weighs 95 kg (209 lb), and has a waist measurement of 44", a chest circumference of 40", and a body mass index of 30 kg/m². Physical examination findings are otherwise normal. Fasting laboratory studies reveal:

Test	Patient's Value	Reference Range
Glucose	115 mg/dL	74-106 mg/dL
High-density lipoprotein	38 mg/dL	40-60 mg/dL
Triglycerides	512 mg/dL	< 150 mg/dL

This patient should be considered at risk for which of the following conditions?

- A. hyperaldosteronism
 - B. hyperinsulinemia
 - C. hyperkalemia
 - D. hypoinsulinemia
 - E. hypokalemia
5. Which of the following is the most appropriate initial cardiac test in evaluating a 68-year-old patient with a history of claudication and angina and abnormal baseline ECG findings with previous evidence of wall motion abnormalities?
- A. exercise stress test only
 - B. exercise stress test with radioisotope scanning
 - C. exercise stress test with 2-dimensional echocardiography
 - D. echocardiography with intravenous contrast
 - E. pharmacologic stress test with radioisotope imaging
6. Which of the following is associated with an increased risk of breast carcinoma?
- A. alcohol consumption
 - B. aspirin
 - C. early menopause
 - D. multiparity
 - E. raloxifene (Evista®)

7. Which of the following is the most appropriate interpretation of the ECG shown in the exhibit?



- A. atrial fibrillation
- B. sinus tachycardia
- C. normal sinus rhythm
- D. third-degree heart block
- E. multifocal atrial tachycardia

8. A study evaluated the use of D-dimer in patients judged to be at low to moderate risk of deep vein thrombosis. Out of 100 patients with negative D-dimer results, 98 were found to be free of any evidence of deep vein thrombosis for up to 90 days after testing. Two patients with negative D-dimer results were found to have evidence of deep vein thrombosis. Which of the following is correct regarding this study?

- A. D-dimer has a sensitivity of 2%
- B. D-dimer has a positive likelihood ratio of 2.0
- C. D-dimer has a positive predictive value of 2%
- D. D-dimer has a negative predictive value of 98%
- E. D-dimer has a negative likelihood ratio of -2.0

9. A 22-year-old woman who is a nursing student completed the 3-injection series for hepatitis B 6 months ago. Which of the following tests should be utilized to determine her immunity?
- A. HBV DNA
 - B. hepatitis B IgG core antibody
 - C. hepatitis B IgM core antibody
 - D. hepatitis B surface antibody
 - E. hepatitis B surface antigen
10. A 72-year-old man presents with the concerns of urinary incontinence and straining on urination. The patient states that the amount of urine is very small and that he always has a feeling of incomplete voiding. The most likely diagnosis is
- A. overflow incontinence
 - B. urge incontinence
 - C. stress incontinence
 - D. functional incontinence
 - E. mixed incontinence
11. Which of the following office policies is affected by Occupational Safety and Health Administration (OSHA) regulations?
- A. PPD testing of all employees is to be conducted quarterly
 - B. any medical waste is to be placed in a red bag
 - C. only latex gloves are to be worn as hand protection
 - D. masks are to be worn by employees with a cough
 - E. separate refrigerators are to be used for food and medications
12. Which of the following vaccines contains live organisms?
- A. diphtheria, tetanus, pertussis (DTaP)
 - B. measles, mumps, rubella (MMR)
 - C. hepatitis B (HepB)
 - D. inactivated polio vaccine (IPV)
 - E. *Haemophilus influenzae* type b (Hib)

13. A 26-year-old woman presents with scaly white patches on her chest, back, and shoulders. Examination with a Wood lamp reveals orange-brown fluorescence. KOH examination of the skin scraping reveals a "spaghetti and meatballs" pattern. The most likely diagnosis is
- A. candidiasis
 - B. erythrasma
 - C. pityriasis rosea
 - D. tinea corporis
 - E. tinea versicolor
14. A 14-year-old boy complains of a cough, wheezing, and chest tightness. He is trying out for the basketball team at school and notices that these symptoms occur shortly after the start of exercising. He states that he had to sit out of several practices because he could not keep up with the other players without getting short of breath. Physical examination findings are normal. The most appropriate first-line therapy for this patient is
- A. albuterol metered-dose inhaler (Ventolin®)
 - B. observation
 - C. cromolyn sodium inhaler (Intal®)
 - D. fluticasone inhaler (Flovent®)
 - E. theophylline (Theo-Dur®)
15. An 8-year-old boy presents with a 2-week history of upper respiratory tract infection symptoms. Physical examination reveals a palpable rash with pink to red papules that blanch when pressure is applied. The rash is limited to the patient's lower extremities. The patient complains of pain in his ankles and knees. Distal pulses are 3+ bilaterally, and deep tendon reflexes are equal. The most likely diagnosis is
- A. systemic lupus erythematosus
 - B. septicemia
 - C. pityriasis rosea
 - D. Rocky Mountain spotted fever
 - E. Henoch-Schönlein purpura

16. A 14-month-old girl is brought to the office for evaluation following the sudden onset of fever with temperatures up to 40.0°C (104.0°F). Physical examination reveals no pathologic findings. Three days later, as the patient's temperature returns to normal, a maculopapular skin eruption appears over the body, starting on the trunk. The most likely diagnosis is
- A. erythema infectiosum
 - B. roseola infantum
 - C. rubeola
 - D. mumps
 - E. varicella-zoster
17. A type of incontinence most frequently encountered in postmenopausal women due to reduced intraurethral pressure with increased intra-abdominal pressure is
- A. urge incontinence
 - B. stress incontinence
 - C. overflow incontinence
 - D. functional incontinence
 - E. atonic incontinence

18. A previously healthy 5 1/2-year-old girl presents with bloody stools and emesis 3 days after drinking unpasteurized cider. Two days after beginning an antimotility medication, she becomes listless and pale with markedly decreased urination. Laboratory studies reveal:

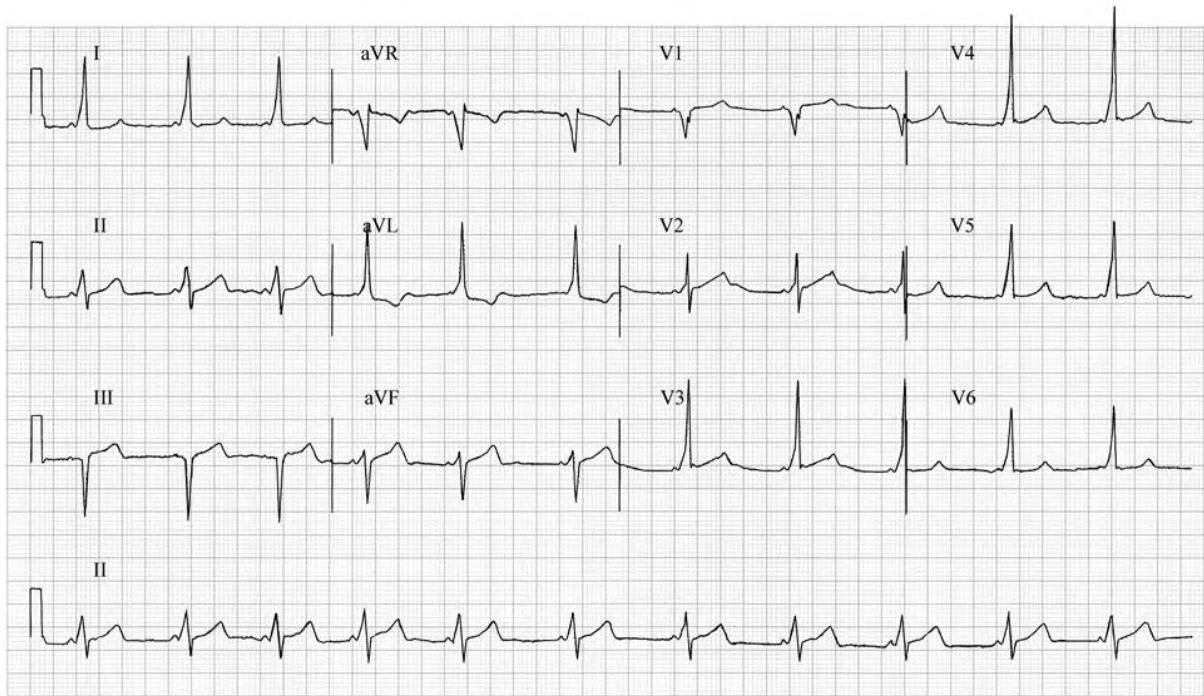
Test	Patient's Value	Reference Range
Hemoglobin	9.8 g/dL	11.5-14.5 g/dL
Hematocrit	40.2%	33-43%
Leukocyte count	$4.0 \times 10^3/\text{mcL}$	$5.5-15.5 \times 10^3/\text{mcL}$
Bands	0%	3-5%
Neutrophils	85%	54-62%
Platelet count	$75 \times 10^3/\text{mcL}$	$150-350 \times 10^3/\text{mcL}$
BUN	55 mg/dL	5-18 mg/dL
Creatinine	1.5 mg/dL	0.3-0.7 mg/dL

The most likely diagnosis is

- A. botulism
 - B. viral gastroenteritis
 - C. thrombotic thrombocytopenic purpura
 - D. diabetic ketoacidosis
 - E. hemolytic uremic syndrome
19. Which of the following is correct regarding alcohol detoxification?
- A. it can be undertaken in ambulatory settings with patients who show mild to moderate withdrawal symptoms when they are not drinking
 - B. it is reasonable to try alcohol detoxification in ambulatory settings in all patients
 - C. long-acting benzodiazepines must be given only through symptom-triggered regimens
 - D. it must take place only in an inpatient setting
 - E. outpatient detoxification may be initiated despite a history of withdrawal seizures

20. An absolute contraindication for an endometrial biopsy is
- A. abnormal Pap smear results
 - B. acute cervicitis
 - C. aspirin use
 - D. uterine anteversion
 - E. uterine retroversion
21. A 27-year-old man presents with the concerns of abdominal pain, fever, and weight loss. Past medical history is significant for episodes of oligoarthritis that last 2 to 3 weeks, usually involving the knees and ankles, and a long-standing history of recurrent iritis and aphthous ulcers. The most likely diagnosis is
- A. celiac disease
 - B. Crohn disease
 - C. irritable bowel syndrome
 - D. reactive arthritis
 - E. Whipple disease

22. A 7-year-old boy is brought to the office by his parents, who are concerned that whenever he exercises or "plays hard," he experiences chest pain. Physical examination reveals normal findings. An ECG is obtained, as shown in the exhibit. The most likely diagnosis is

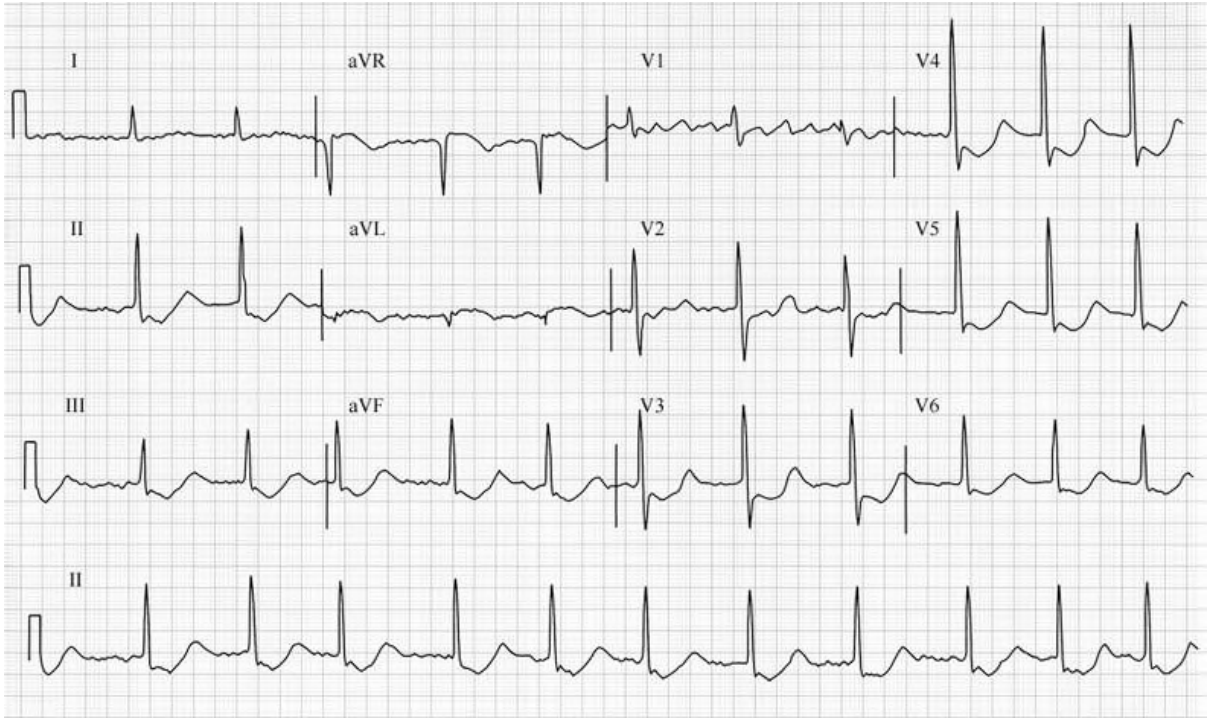


- A. bifascicular block
 - B. Lown-Ganong-Levine syndrome
 - C. normal variant
 - D. right bundle-branch block
 - E. Wolff-Parkinson-White syndrome
23. A toddler with croup presents to the emergency department in acute respiratory distress with stridor at rest. The medication that would have the most rapid onset of action in this patient would be
- A. intramuscular dexamethasone (Decadron®)
 - B. intravenous dexamethasone (Decadron®)
 - C. racemic albuterol (Ventolin®)
 - D. racemic epinephrine (Asthmanefrin®)
 - E. subcutaneous epinephrine (Adrenaclick®)

24. A 9-year-old boy with a history of asthma presents for a routine examination. Physical examination reveals a large polyp in the left naris. The most appropriate initial management is an
- A. allergy referral
 - B. intranasal antihistamine spray
 - C. intranasal steroid spray
 - D. oral antihistamine
 - E. otolaryngology referral
25. A 14-year-old girl is brought to the office for a health maintenance examination. Past medical history is significant for attention deficit hyperactivity disorder (ADHD). She has been stable on atomoxetine (Strattera®) and is doing well in school. She states that she has tried smoking a few times. Which of the following is the prognosis for this patient's likelihood of smoking in adulthood?
- A. adolescents are less likely than adults to become addicted to nicotine
 - B. only 10% of adolescents who smoke daily will smoke as adults
 - C. teenage girls are less likely than teenage boys to become addicted to nicotine
 - D. there is no association between ADHD and adolescent smoking
 - E. trying a few cigarettes during adolescence doubles the risk of smoking during early adulthood
26. A 35-year-old woman presents to the office after she tested positive for hepatitis C at a health screening fair. She shows you the laboratory study results, which indicate that she is positive for HCV antibodies. She is at low risk for hepatitis C since she has no history of intravenous drug abuse or blood transfusions. She has also been in a monogamous relationship for 13 years. The most appropriate next step would be to
- A. monitor liver function tests and immunize with hepatitis A and B
 - B. order a liver biopsy
 - C. order ultrasonography of the liver
 - D. repeat the test
 - E. test for HCV RNA

27. A 23-year-old woman presents to the office after experiencing 5 episodes of syncope over the past 6 months. Following a thorough history and physical examination, you suspect neurocardiogenic syncope. Which of the following is most likely to confirm this patient's diagnosis?
- A. ambulatory blood pressure monitor
 - B. electroencephalography
 - C. Holter monitor
 - D. implantable loop recorder
 - E. tilt table testing
28. Which of the following is correct regarding the insulins lispro (Humalog®) and aspart (NovoLog®)?
- A. contraindicated with NPH insulin therapy
 - B. control postprandial hyperglycemia better than regular insulin
 - C. duration of action is longer than regular insulin
 - D. lower cardiovascular risks than metformin (Glucophage®)
 - E. onset of action is delayed compared to regular insulin
29. A 14-year-old boy requests treatment for acne. He has open and closed comedones on his face without evidence of inflammation or cyst formation. The most appropriate initial treatment is
- A. oral isotretinoin (Accutane®)
 - B. oral tetracycline (Minocycline®)
 - C. topical erythromycin (Erygel®)
 - D. topical clindamycin (Cleocin T®)
 - E. topical tretinoin (Retin-A®)
30. A 17-year-old boy who is a high school track athlete develops pain in his right foot during midseason. Onset during practice was sudden and involved no trauma. He reports that it is painless at rest and on awakening but exacerbates with running. There is no pain with walking. Arch taping helps but does not eliminate the pain. Examination reveals that it is centered in the midfoot. There is no erythema or edema. The most likely diagnosis is
- A. cuneiform torsion
 - B. Lisfranc dislocation
 - C. pes planus
 - D. plantar fasciitis
 - E. stress fracture

31. An 80-year-old woman presents with all of her medications after she was hospitalized for acute cardiac decompensation. She admits to having no appetite and occasional nausea. You note that she now has a fine resting tremor. An ECG is obtained, as shown in the exhibit. The most likely diagnosis is



- A. acute anterior wall myocardial infarction
 - B. acute inferior wall myocardial infarction
 - C. digitalis toxicity
 - D. hyperkalemia
 - E. pericarditis
32. Which of the following is most appropriate when treating a patient with trichomoniasis?
- A. fluconazole (Diflucan®) for the patient and all sexual partners
 - B. fluconazole (Diflucan®) for the patient only
 - C. metronidazole (Flagyl®) for the patient and all sexual partners
 - D. metronidazole (Flagyl®) for the patient only
 - E. vaginal metronidazole (Metrogel®) for the patient only

- 33.** A macrosomic 4,600-g neonate is delivered. The neonate has a 1-minute Apgar score of 8 and a 5-minute Apgar score of 6. Points are taken off for color, muscle tone, and reflex irritability. This is most likely due to
- A. congenital cardiac abnormality
 - B. Down syndrome
 - C. hypoglycemia
 - D. hypothyroidism
 - E. sepsis
- 34.** A 54-year-old man is brought to the emergency department for evaluation of altered mental status. Past medical history is significant for coronary artery bypass graft, hypertension, and type 2 diabetes. He is confused and is unable to provide any additional history. The remainder of the physical examination findings are unremarkable. Laboratory study results are normal except for a calcium level of 17.4 mg/dL (reference range: 8.6-10.2 mg/dL). The most appropriate initial treatment following intravenous fluids is
- A. benazepril (Lotensin®)
 - B. dobutamine (Dobutrex®)
 - C. zoledronic acid (Reclast®)
 - D. indapamide (Lozol®)
 - E. mexiletine (Mexitil®)
- 35.** A 45-year-old man is brought to the emergency department after a motor vehicle collision. History reveals that he was stopped at a red light when he was hit from behind. He reports that his headrest was too low, as he had not adjusted it properly in his new car. This patient most likely injured the
- A. anterior longitudinal ligament
 - B. interspinous ligament
 - C. ligamentum flavum
 - D. posterior longitudinal ligament
 - E. supraspinous ligament

36. A 72-year-old woman with a known history of aortic stenosis presents to the office with a 2-week history of dyspnea and syncope. The most appropriate diagnostic test to assess the severity of this patient's condition is
- A. CT scan
 - B. echocardiography
 - C. electrocardiography
 - D. MUGA scan
 - E. thallium stress test
37. An 8-year-old boy presents for evaluation of potential attention deficit hyperactivity disorder. His mother reports that his teachers have been concerned about his attention level because they frequently have to repeat instructions to him. At home, his brother has noticed that he will stare for several seconds at a time; during this time, he does not respond to questions. An electroencephalogram reveals a 3-Hz spike-and-wave complex. The most appropriate treatment for this patient is
- A. carbamazepine (Tegretol®)
 - B. clonidine (Catapres®)
 - C. ethosuximide (Zarontin®)
 - D. fluoxetine (Prozac®)
 - E. methylphenidate (Ritalin®)
38. A 42-year-old man presents to the office with the concern of left shoulder pain. He denies any specific injury but admits to starting a new tennis class 3 months ago. He reports that it has become difficult for him to reach overhead and to reach behind. He is occasionally awakened at night if he rolls onto his shoulder. Physical examination reveals full range of motion in all planes with obvious discomfort at end ranges of motion for flexion, abduction, and internal rotation. There is significant pain when you place the shoulder in a position of 90 degrees flexion and then internally rotate. The remainder of the musculoskeletal examination findings are normal. The most likely diagnosis is
- A. acromioclavicular sprain
 - B. adhesive capsulitis
 - C. cervical radiculopathy
 - D. rotator cuff impingement
 - E. rotator cuff tear

39. Which of the following is correct regarding the use of angiotensin receptor-blocking agents for patients with heart failure?
- A. appropriate for patients with either systolic or diastolic dysfunction
 - B. only appropriate for patients with a decreased ejection fraction
 - C. should be avoided in patients with cor pulmonale
 - D. should be avoided in patients with diastolic dysfunction
 - E. should only be utilized for patients with hypertension and heart failure
40. The first dose of the rotavirus (RV) vaccination (RotaTeq®) series should be administered at which of the following ages?
- A. birth to 4 weeks old
 - B. 6 to 12 weeks old
 - C. 6 months old
 - D. 1 year old
 - E. 15 months old
41. Which of the following is the most appropriate topical treatment for seborrhea of the hairline?
- A. adapalene (Differin®)
 - B. betamethasone (Diprosone®)
 - C. clindamycin (Cleocin T®)
 - D. ketoconazole (Nizoral®)
 - E. pimecrolimus (Elidel®)
42. A 48-year-old woman had a total hysterectomy due to excessive bleeding from uterine fibroids. She has no history of abnormal Pap smear results, has been in a monogamous relationship since age 20, and has no history of diethylstilbestrol exposure or any immunocompromised condition. According to American Cancer Society guidelines, how often should this patient have a Pap smear?
- A. every year
 - B. every 2 years
 - C. every 3 years
 - D. every 5 years
 - E. Pap smears are not indicated

43. A 22-year-old woman presents with a 9-month history of breast secretions, amenorrhea, and decreased libido. No other symptoms are present. Her blood pressure is 140/80 mmHg. A β -HCG test result is negative. The most likely diagnosis is
- A. anorexia nervosa
 - B. fibrocystic breast disease
 - C. hypopituitarism
 - D. prolactinoma
 - E. stress-induced amenorrhea
44. A 15-year-old boy who plays football presents to the office after an injury to his right shoulder. History reveals that immediately following the injury, he complained of burning and shooting pain from his neck into his right upper arm. On examination, he complains of muscle weakness of the right deltoid muscle. A small circular patch on the lateral deltoid that appears to have decreased sensation to touch is noted. Deep tendon reflexes are +2/4 for biceps, triceps, and brachioradialis bilaterally. The most likely diagnosis is
- A. biceps tendonitis
 - B. brachial plexus stretch injury
 - C. deltoid tendonitis
 - D. impingement syndrome
 - E. rotator cuff strain
45. A 13-year-old girl who plays softball is brought to the office with a 2-day history of left ankle pain. She reports "rolling the ankle under" while running down the stairs at home. She was not able to walk or bear weight immediately after the injury and has been using crutches to ambulate. Which of the following findings is most supportive of a decision to obtain radiographic studies of the ankle?
- A. ecchymosis around the lateral malleolus
 - B. positive drawer test result
 - C. positive squeeze test result
 - D. positive talar tilt test result
 - E. tenderness to palpation of the posterior lateral malleolus

46. A 72-year-old man presents for evaluation of a tremor in both of his arms that has been progressively worsening over the last 6 months. The tremor initially began in the left arm and 4 months ago began in the right arm. The tremor only occurs while he is at rest. He reports that he has been moving more slowly and has to take much smaller steps. He is taking no new medications. The most appropriate next step to confirm the diagnosis is
- A. complete history and physical examination
 - B. CT scan of the head with intravenous contrast
 - C. lumbar puncture
 - D. MRI of the brain
 - E. electroencephalography
47. Which of the following criteria must be met for a patient covered by Medicare to be eligible for hospice?
- A. patient has signed a do-not-resuscitate order
 - B. patient must agree to forgo future hospitalizations
 - C. patient must first be transferred out of a nursing home
 - D. patient's prognosis must be 6 months or less
 - E. patient's referral must come from his or her primary care physician
48. A 25-year-old man presents with an upper respiratory infection. Anterior cervical soft tissue treatment is most likely to affect this patient's ability to respond to the infection due to treatment of the
- A. Chapman reflex
 - B. lymphatic drainage
 - C. parasympathetic somatovisceral reflexes
 - D. scalene muscles
 - E. sympathetic somatovisceral reflexes

49. A 32-year-old woman presents with a 3-year history of heavy, very painful menstrual bleeding and iron deficiency anemia. The most likely pathology will manifest a sympathetic viscerosomatic reflex in which of the following areas?
- A. C2-C3
 - B. T5-T8
 - C. T10-L2
 - D. L3-S1
 - E. S2-S4
50. A 15-year-old girl presents to the office for evaluation of a tubal pregnancy. The pathology of the fallopian tubes is most likely to manifest a sympathetic viscerosomatic reflex in which of the following areas?
- A. C2-C4
 - B. T1-T5
 - C. T6-T9
 - D. T10-L2
 - E. S2-S4
51. A 65-year-old woman with a history of hypertension and severe mitral regurgitation presents with the sudden onset of left-sided face and arm weakness. She is admitted to the hospital with a diagnosis of right middle cerebral artery stroke. Heart monitoring reveals atrial fibrillation. As a long-term preventive measure to prevent an embolic event, this patient should be placed on
- A. aspirin (Ecotrin®)
 - B. clopidogrel (Plavix®)
 - C. rivaroxaban (Xarelto®)
 - D. propranolol (Inderal®)
 - E. warfarin (Coumadin®)

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52. A 60-year-old asymptomatic woman with a history of occasional alcohol consumption presents for a health maintenance examination. She is 1.7 m (5'7") tall and weighs 102 kg (225 lb). The remainder of the physical examination findings are normal. Laboratory studies reveal:

Test	Patient's Value	Reference Range
Alanine aminotransferase	85 U/L	< 34 U/L
Aspartate aminotransferase	60 U/L	< 31 U/L
Alkaline phosphatase	70 U/L	42-98 U/L
Total bilirubin	0.8 mg/dL	0.3-1.2 mg/dL

The most likely diagnosis is

- A. alcoholic liver disease
 - B. Gilbert disease
 - C. hepatitis C
 - D. intrahepatic cholestasis
 - E. nonalcoholic fatty liver disease
53. A 6-year-old girl is brought to the office with a 2-week history of recurring limb pain that occasionally awakens her from sleep. She has not needed any medications for the discomfort since the pain self-resolves by morning and daily activity is unimpaired. Physical examination reveals no inflammatory signs and no joint or muscle tenderness. The most appropriate next step is
- A. antinuclear antibody testing
 - B. complete blood count
 - C. erythrocyte sedimentation rate
 - D. observation
 - E. radiography of the hips and knees

54. A 7-year-old girl presents with a 1-day history of a lesion on her back. History reveals that it began as 1 patch on her back and has now evolved into multiple smaller erythematous macules on her extremities that are itchy and spreading peripherally. She denies any current fevers. Physical examination reveals the findings shown in exhibit 1 and exhibit 2. The most likely diagnosis is



- A. erythema infectiosum
- B. pityriasis alba
- C. pityriasis rosea
- D. tinea corporis
- E. tinea versicolor

55. The most appropriate initial screening test for abdominal aortic aneurysm is
- A. angiography
 - B. CT scan with contrast
 - C. CT scan without contrast
 - D. MRI
 - E. ultrasonography
56. Which of the following accurately describes the Stark Law?
- A. allows physicians to refer to their own laboratory
 - B. establishes a central health care fraud and abuse database for the reporting of final adverse actions (not including malpractice claims and settlements in which no findings of liability have been made) against health care professionals, providers, and suppliers
 - C. imposes liability on anyone who knowingly makes, uses, or causes to be made or used a false record or statement to get a false or fraudulent claim paid or approved by the government
 - D. prevents physicians and their immediate family members who have an ownership or compensation relationship with a clinical laboratory services facility from making referrals to it
 - E. states that health care professionals and entities are prohibited from presenting or causing to be presented claims for services that the individual or entity "knows or should know" were not provided as claimed
57. A cohort study of the relationship between fruit and vegetable intake and protection against coronary artery disease showed that high cholesterol is positively associated with coronary artery disease and is inversely associated with the dietary intake of fruits and vegetables. The investigators report that fruit and vegetable intake protects against the development of coronary artery disease but does not control for the effects of high cholesterol. The most likely form of bias or error is
- A. confounding
 - B. information bias
 - C. measurement bias
 - D. random error
 - E. selection bias

58. The most common cause of sudden death in an athlete older than age 45 is
- A. anomalous coronary artery
 - B. aortic dissection
 - C. coronary artery disease
 - D. hypertrophic cardiomyopathy
 - E. myocarditis
59. A 68-year-old man presents to the office with the concern of decreased urine output. Laboratory studies reveal a serum creatinine level of 2.50 mg/dL (reference range: 0.62-1.10 mg/dL). Laboratory studies 2 months ago revealed a serum creatinine level of 1.20 mg/dL. Which of the following laboratory results is most likely to confirm a diagnosis of prerenal acute kidney injury in this patient?
- A. 24-hour urine sodium level greater than 40 mEq/24 h
 - B. blood urea nitrogen-to-creatinine ratio greater than 20
 - C. fraction of filtered sodium greater than 2%
 - D. granular casts in urine sediment
 - E. urine osmolality less than 400 mOsm/kg water
60. Palpatory findings consistent with angina are most likely to be found at which of the following locations?
- A. C5
 - B. T2
 - C. T5
 - D. T10
 - E. T12
61. A 26-year-old gravida 1 para 0-0-0-0 woman at 31 weeks' gestation presents with the concern of clear fluid leaking from her vagina. A fetal monitoring strip does not detect any uterine contractions. Premature rupture of membranes is suspected. The most appropriate next step to confirm the diagnosis is to
- A. obtain a urinalysis
 - B. obtain uterine fluid samples for cytology and a Pap smear
 - C. perform a sterile glove examination to assess cervical dilation and length
 - D. perform a sterile vaginal speculum examination with pH paper testing
 - E. place a sample of urine on a microscopic slide, air dry, and examine for ferning

- 62.** A 24-year-old woman presents to the emergency department with acute left lower quadrant abdominal pain, dizziness, left shoulder pain, and vaginal bleeding. On examination, her abdomen is rigid, and she is found to be hypotensive and tachycardic. Laboratory studies reveal a positive serum pregnancy test result and a quantitative HCG level of 7,500 mIU/mL. A transvaginal ultrasound reveals no gestational sac. An emergency laparotomy is performed. A history of which of the following is a risk factor for this patient's condition?
- A. cervical loop electrosurgical excision procedure
 - B. previous human papillomavirus infection
 - C. prior abdominal surgery
 - D. prior pregnancy
 - E. prior tubal infection
- 63.** A 39-year-old woman presents with a 2-week history of right knee pain that is associated with swelling, erythema, and restriction of full flexion of her knee. Physical examination reveals sausage digits of the hands. A radiograph of the knee reveals normal mineralization, bony erosion, bone production, and significant loss of joint space. The most likely diagnosis is
- A. gouty arthritis
 - B. lupus arthritis
 - C. osteoarthritis
 - D. psoriatic arthritis
 - E. traumatic arthritis
- 64.** According to the U.S. Preventive Services Task Force, which of the following is correct regarding annual skin cancer screening?
- A. annual complete skin examination for all patients is recommended
 - B. annual comprehensive skin examination for patients aged 40 and older is recommended
 - C. complete skin examination every 3 years for patients aged 20 to 39 is recommended
 - D. comprehensive skin examination every 3 years for patients aged 40 and older is recommended
 - E. there is insufficient evidence to recommend for or against routine complete skin examinations

65. A 12-year-old girl is brought to the office with the concern of embarrassing warts on her fingers. Past medical history is unremarkable. Physical examination reveals several grayish-brown papules with scaly surfaces. The most appropriate treatment is

- A. cidofovir (Vistide®)
- B. imiquimod (Aldara®)
- C. intralesional 5-fluorouracil (Adrucil®)
- D. salicylic acid paste (Virasal®)
- E. surgical excision

66. A 45-year-old woman presents with polydipsia, polyuria, and a 4.5-kg (10.0-lb) weight loss over the past 3 weeks. Past medical history is significant for hypothyroidism that is managed with levothyroxine (Synthroid®). Physical examination reveals a body mass index of 21 kg/m². Laboratory studies reveal:

Test	Patient's Value	Reference Range
Thyroid-stimulating hormone	2.2 mIU/mL	0.4-4.2 mIU/mL
Glucose	627 mg/dL	70-125 mg/dL
Hemoglobin A1c	11.7%	4.0-5.6%

The most likely diagnosis is

- A. gestational diabetes
- B. juvenile diabetes mellitus
- C. latent autoimmune diabetes of the adult
- D. thyrotoxic hyperglycemia
- E. type 2 diabetes

67. A 48-year-old man presents with the concern of acute low back pain that radiates to his right foot. He reports that he started tripping over his right foot today. Examination reveals weakness of knee extension and decreased sensation at the medial aspect of the foot. The patellar reflex is diminished on the involved side. The nerve root most likely affected is

- A. L2
- B. L3
- C. L4
- D. L5
- E. S1

68. A 58-year-old man presents with the concern of foot pain. He reports that the base of his great toe began to throb yesterday and is very painful to touch. Walking is very difficult due to the pain. He has taken acetaminophen (Tylenol®) with no relief. He takes no other medications. He smokes a pack of cigarettes daily and drinks a 6-pack of beer daily. On examination, the metatarsophalangeal joint of the right foot is swollen, erythematous, and painful to touch. No ulcerations are noted. The most appropriate initial treatment is
- A. allopurinol (Zyloprim®) 100 mg daily with food
 - B. ibuprofen (Motrin®) 800 mg 3 times daily
 - C. ice packs and rest
 - D. oxycodone-acetaminophen (Percocet®) 5/325 mg every 4 hours as needed for pain
 - E. probenecid (Benemid®) 250 mg twice daily
69. Which of the following treatments has been shown to alter the long-term rate of decline in lung function in patients with chronic obstructive pulmonary disease?
- A. inhaled fluticasone (Flovent®)
 - B. inhaled ipratropium bromide (Atrovent®)
 - C. oral theophylline (Theo-Dur®)
 - D. oxygen therapy
 - E. smoking cessation
70. A 23-year-old man is brought to the office by his wife for evaluation. While he sits silently and stares at the ground, his wife reports that over the past 4 months, he has gradually become withdrawn and has lost interest in everything. She states that most recently he will not even bathe without her insistence. She reports outbursts of anger over the past few weeks and describes him as yelling at the plants in their home. Initial management of this patient should include
- A. electroconvulsive therapy
 - B. one-on-one psychotherapy
 - C. prescription of fluoxetine (Prozac®)
 - D. prescription of olanzapine (Zyprexa®)
 - E. prescription of venlafaxine (Effexor®)

71. Which of the following is correct regarding Lewy body dementia?
- A. always occurs in women
 - B. causes recurrent visual hallucinations
 - C. has an early-age onset
 - D. is associated with frontal lobe degeneration
 - E. is completely reversible
72. A 32-year-old woman presents with symptoms consistent with recurring migraine headaches. She reports that they significantly interfere with her daily routine 4 times per week. The most appropriate recommendation for this patient is
- A. acetaminophen (Tylenol®) 650 mg 3 times daily
 - B. dihydroergotamine (Migranal®) 4 sprays nasally with each headache
 - C. ibuprofen (Advil®) 800 mg 3 times daily
 - D. propranolol (Inderal®) 40 mg 2 times daily
 - E. sumatriptan (Imitrex®) 50 mg with each headache
73. A 21-year-old gravida 2 para 1 woman at 23 weeks' gestation presents to the office for a prenatal examination. History reveals an uneventful prior pregnancy and normal delivery 2 years ago. She has no risk factors. Blood type is O+, and antibody screening results are negative. Sexually transmitted disease testing results are negative. She reports that her grandmother has been diagnosed with type 2 diabetes and asks if she should be tested. Screening for gestational diabetes in this patient should include a
- A. 75-g oral glucose tolerance test between 24 and 28 weeks' gestation
 - B. fasting finger-stick and 1-hour glucose tolerance test between 24 and 28 weeks' gestation
 - C. hemoglobin A1c level at this visit
 - D. random finger-stick blood glucose level at this visit
 - E. 3-hour glucose tolerance test between 24 and 28 weeks' gestation

- 74.** A 26-year-old man presents to the office for evaluation of angry outbursts, mood swings, and vivid and disturbing dreams that are interfering with his relationships. History reveals that he recently completed a tour of duty in Afghanistan. The most appropriate treatment for this patient is
- A. alprazolam (Xanax®)
 - B. aripiprazole (Abilify®)
 - C. duloxetine (Cymbalta®)
 - D. paroxetine (Paxil®)
 - E. risperidone (Risperdal®)
- 75.** A 71-year-old woman presents to the office for an initial health maintenance examination. Her medical records indicate that her last mammogram was 2 years ago. All of her previous mammogram findings have been normal, and she has no family history of breast cancer. Her last Pap smear was also 2 years ago. She states that she has received a Pap smear every 2 to 3 years for most of her life. She reports 1 abnormal Pap smear at age 55 that did not reveal cancer. Based on the current guidelines from the U.S. Preventive Services Task Force (USPSTF), which of the following screening recommendations would most likely apply to this patient?
- A. mammogram and Pap smear screenings annually for life
 - B. mammogram screening for life, and Pap smear screening is no longer recommended
 - C. mammogram screening is no longer recommended, and Pap smear screening through age 74
 - D. mammogram screening through age 74, and Pap smear screening is no longer recommended
 - E. neither mammogram nor Pap smear screenings are recommended after age 70
- 76.** A 26-year-old man presents to the office with a 2-month history of recurrent low back pain that typically involves the right sacroiliac joint. The pain has been present since he started an exercise routine, and his symptoms worsen with excessive walking or running. Imaging studies of the spine reveal no fractures or deformities. Which of the following is most likely contributing to this patient's condition?
- A. cauda equina syndrome
 - B. lumbar lordosis
 - C. thoracic kyphosis
 - D. leg length discrepancy
 - E. scoliosis

77. A 45-year-old woman presents with a 6-month history of irregular and heavy vaginal bleeding. She cannot identify any particular pattern. She has experienced occasional hot flashes but does not have menstrual cramping or breast tenderness. She uses tobacco and had a tubal ligation at the age of 32. Her only medication is hydrochlorothiazide (HydroDIURIL®) for hypertension. Physical examination findings are normal. Testing reveals normal complete blood count, thyroid-stimulating hormone, and Pap smear results, as well as a negative urine pregnancy test result. An endometrial biopsy reveals endometrial hyperplasia without atypia. The most appropriate initial treatment is
- A. cyclic estrogen
 - B. cyclic progesterone
 - C. drospirenone-ethinyl estradiol
 - D. ethinyl estradiol-norgestrel
 - E. hysterectomy
78. Which of the following is correct regarding emergency contraception?
- A. main side effects are nausea and irregular bleeding
 - B. only available with a prescription
 - C. only effective if given within 24 hours of intercourse
 - D. only product specifically approved for emergency contraception in the United States is an estrogen-progesterone combination
 - E. pregnancy testing must be performed before administration
79. A 24-year-old woman wishes to become pregnant. History reveals that she has asthma. Regarding her asthma during her pregnancy, she should be informed that
- A. asthma medications are contraindicated in pregnancy
 - B. β -adrenergic medications should be avoided in pregnancy since they can cause preterm labor
 - C. most medications to control asthma are safe in pregnancy
 - D. pregnancy and asthma are a risky combination and she should not get pregnant
 - E. use of montelukast sodium (Singulair®) is contraindicated in pregnancy

80. A 44-year-old woman presents to the office for an annual health maintenance examination. She says that she has regular menses and has been in a monogamous relationship with her male partner for the past 15 years. Past medical history reveals no gynecologic issues, including no abnormal Pap smear results. According to the U.S. Preventive Services Task Force and American Cancer Society guidelines, the most appropriate recommendation to give this patient is that she should receive
- A. a Pap smear with cytology and high-risk human papillomavirus (HPV) testing every 3 years
 - B. a Pap smear with cytology and high-risk human papillomavirus (HPV) testing every 5 years
 - C. a Pap smear with cytology every 5 years
 - D. cervical cancer screening may be discontinued
 - E. high-risk human papillomavirus (HPV) testing only every 3 years
81. A 19-year-old woman presents to the office with a 2-week history of vaginal discharge and pain on urination. She reports being sexually active with multiple male partners and that her partners did not always use condoms. Which of the following is the most likely infectious disease based on both her symptoms and statistics on reportable sexually transmitted diseases in this patient's age group?
- A. chlamydia
 - B. gonorrhea
 - C. herpes simplex
 - D. syphilis
 - E. trichomoniasis
82. A 67-year-old man is admitted to the hospital with shortness of breath. Past medical history reveals diet-controlled diabetes mellitus, erectile dysfunction, and chronic obstructive pulmonary disease. He does not take any medications. Vital signs reveal a temperature of 37.0°C (98.6°F) and a blood pressure of 146/92 mmHg. Physical examination reveals bilateral crackles at the lung bases and 2+ edema in the extremities. A chest radiograph reveals an enlarged heart, pulmonary vascular congestion, and effusions. An echocardiogram demonstrates an enlarged left ventricle with an ejection fraction of 40%. The patient's symptoms improve with diuresis. Which of the following medications should be added to this patient's regimen to most appropriately treat this new diagnosis?
- A. aspirin and amlodipine (Norvasc®)
 - B. carvedilol (Coreg®) and lisinopril (Prinivil®)
 - C. hydrochlorothiazide (HydroDIURIL®) and metoprolol (Lopressor®)
 - D. spironolactone (Aldactone®) and digoxin (Lanoxin®)
 - E. warfarin (Coumadin®) and hydralazine (Apresoline®)

83. A 76-year-old woman who resides in an extended care facility develops a discoloration of her urine. She has a chronic indwelling urinary catheter. She has no fever, no mental status changes, and is generally asymptomatic. Urinalysis is positive for nitrites, leukocyte esterase, and leukocytes (reference range for all: negative). Which of the following is the most appropriate next step?
- A. no treatment is necessary at this time
 - B. order a urine culture and treat with trimethoprim-sulfamethoxazole (Bactrim®) until results return
 - C. order a urine culture and treat with antibiotics based on culture results
 - D. treat with ciprofloxacin (Cipro®) for 3 days
 - E. treat with trimethoprim-sulfamethoxazole (Bactrim®) for 5 days
84. A 38-year-old man with a history of alcohol use disorder presents with nausea, vomiting, and diffuse abdominal pain that radiates to his back. Which of the following laboratory values is most suggestive of a poor prognosis in this patient?
- A. anion gap of 10 mEq/L
 - B. diastolic blood pressure greater than 90 mmHg
 - C. elevated serum amylase level
 - D. elevated serum lipase level
 - E. leukocyte count of $20.0 \times 10^3/\text{mCL}$
85. A 70-year-old man with a 45-year history of well-controlled hypertension presents to the office for a health maintenance examination. His blood pressure is 180/100 mmHg. Three weeks later, on a follow-up evaluation, his blood pressure is 200/110 despite adjusting and adding medications to his regimen. The most likely etiology for the sudden loss of control of this patient's hypertension is
- A. coarctation of the aorta
 - B. Cushing disease
 - C. hyperaldosteronism
 - D. pheochromocytoma
 - E. renal artery stenosis

86. A 16-year-old girl presents with a 3-month history of stomach pain, weight loss, and occasional fevers. She reports a 2-month history of frequent loose stools but denies any black or bloody stools. Her stomach is crampy at times, and she reports that she has missed several days of school because of the severity of the pain. She has lost approximately 4.5 kg (10.0 lb) over the past 3 months without trying. The most likely diagnosis is
- A. anorexia nervosa
 - B. Crohn disease
 - C. food poisoning
 - D. gastritis
 - E. irritable bowel syndrome
87. A 40-year-old woman presents to the office with the concerns of blood in her urine and right-sided flank pain. A CT scan reveals a right ureteral kidney stone and gallstones. The most appropriate management for this patient's gallstones is
- A. cholecystectomy
 - B. confirmatory ultrasonography
 - C. endoscopic retrograde cholangiopancreatography
 - D. hepatobiliary scan
 - E. observation
88. A 60-year-old man with hypertension, diabetes, and chronic kidney disease presents to the office. Current medications include lisinopril (Zestril®), amlodipine besylate (Norvasc®), and glipizide (Glucotrol®). Laboratory studies reveal a potassium level of 5.5 mEq/L (reference range: 3.5-5.1 mEq/L) and a creatinine level of 2.60 mg/dL (reference range: 0.62-1.10 mg/dL). He reports drinking a lot of orange juice. A low-potassium diet is suggested. His next laboratory study reveals a potassium level of 5.3 mEq/L. The most appropriate next step in the management of this patient is to
- A. add a diuretic
 - B. discontinue the lisinopril (Zestril®)
 - C. increase his fluid intake
 - D. initiate dialysis
 - E. prescribe sodium polystyrene sulfonate (Kayexalate®)

89. A 26-year-old gravida 1 para 0 woman presents to the labor and delivery unit in active labor. She is completely dilated. After several pushes, she expels the fetal head but appears unable to deliver the shoulders. The most appropriate next step is

- A. Gaskin maneuver
- B. immediate cesarean section
- C. McRoberts maneuver
- D. Rubin I maneuver
- E. use of a vacuum extractor

90. A 28-year-old man presents with the concern of diffuse, gradual scrotal pain that is located posterior to the testes and radiates to the lower abdomen. On examination, the scrotum is red and painful. The most likely cause of this patient's symptoms is

- A. *Escherichia coli* or group B streptococci
- B. gonorrhea and chlamydia
- C. HIV and herpes
- D. systemic tuberculosis or *Mycobacterium avium*
- E. testicular torsion or trauma

91. A 5-month-old boy is brought to the office for evaluation of a cough. His mother reports that he has been coughing in bursts for the past week. He tries to catch his breath after coughing with deep, whooping inhalations. He often vomits after coughing. The most appropriate first-line medication class to prescribe is

- A. antivirals
- B. broad-spectrum cephalosporins
- C. fluoroquinolones
- D. immunoglobulins
- E. macrolides

- 92.** A 65-year-old woman presents to the office with the concerns of dysuria and urinary frequency. Past medical history is significant for recurrent complicated urinary tract infections. Vital signs reveal:

Temperature (oral)	38.0°C (100.4°F)
Blood pressure	90/50 mmHg
Heart rate	112/min

Her clean-catch urine specimen reveals leukocytes, occult blood, and nitrites (reference range for all: negative). The most appropriate treatment for this patient is

- A. intravenous levofloxacin (Levaquin®) 500 mg every 24 hours
 - B. intravenous vancomycin (Vancocin®) 1 g every 12 hours
 - C. oral levofloxacin (Levaquin®) 500 mg every 24 hours
 - D. oral nitrofurantoin (Macrobid®) 100 mg twice a day
 - E. oral trimethoprim-sulfamethoxazole (Bactrim DS®) 40/200 mg daily
- 93.** A 24-year-old man is brought to the emergency department with acute new-onset seizures. His roommate states that he had been using cocaine. He also reports that the patient has no known medical conditions. Vital signs reveal a blood pressure of 200/120 mmHg and a heart rate of 156/min. On examination, the patient is sweating, and his temperature is not able to be recorded due to the seizing. Which of the following emergency interventions may be necessary for this patient?
- A. intravenous hydration, intravenous diazepam (Valium®), intravenous labetalol (Trandate®), and a warm blanket
 - B. intravenous hydration, intravenous diazepam (Valium®), intravenous nitroprusside (Nitropress®) drip, and a cooling blanket
 - C. intravenous hydration, intravenous labetalol (Trandate®), intravenous magnesium, and a warm blanket
 - D. intravenous hydration, intravenous phenytoin (Dilantin®), a cooling blanket, and intravenous diazepam (Valium®)
 - E. observation until seizing has stopped and then rechecking vital signs

94. A 32-year-old man presents to the office with a 7-month history of progressive pain in his left hip and groin. The pain is worse when he tries to get in and out of his car and when he leans forward at his desk at work. He recalls no specific injury. He denies any weakness, numbness, or tingling in his hip or leg, and there is no click or catch during movement. There is no pain in the lumbar spine. Vital signs are normal. Physical examination reveals limited range of motion of the left hip on external rotation and internal rotation. What is the most likely diagnosis?
- A. femoroacetabular impingement
 - B. iliopsoas bursitis
 - C. osteoarthritis of the hip
 - D. osteonecrosis of the hip
 - E. synovitis of the hip
95. A 37-year-old man presents to the office for a periodic evaluation of HIV infection. He adheres to his antiretroviral therapy regimen of darunavir (Prezista®), ritonavir (Norvir®), emtricitabine (Emtriva®), and tenofovir (Viread®). Laboratory studies reveal a triglyceride level of 350 mg/dL (reference range < 150 mg/dL) and an LDL cholesterol level of 210 mg/dL (reference range < 100 mg/dL). Which of the following medications is most appropriate to treat his hyperlipidemia?
- A. fenofibrate (Lofibra®)
 - B. niacin (Niaspan®)
 - C. omega-3 fatty acids
 - D. pravastatin (Pravachol®)
 - E. simvastatin (Zocor®)
96. A 35-year-old gravida 3 para 1 woman at 12 weeks' gestation presents for an initial prenatal examination. She reports a history of gestational diabetes with her first pregnancy. Her body mass index is 37 kg/m². The most appropriate recommendation at this time is that she
- A. be reassured that each pregnancy is different and she is no more at risk for gestational diabetes than during her first pregnancy
 - B. begin immediate treatment for gestational diabetes
 - C. proceed with routine testing for gestational diabetes at 24 to 28 weeks' gestation
 - D. test for gestational diabetes at 20 weeks' gestation
 - E. undergo a screening test for diabetes mellitus at this visit

97. A 67-year-old man presents to the emergency department for evaluation of abdominal and flank pain. An abdominal radiograph reveals thickening in a haustral fold. What is the most likely location of the patient's lesion?

- A. common bile duct
- B. gastric mucosa
- C. gastroesophageal junction
- D. proximal cecum
- E. terminal ileum

98. A 30-year-old woman presents to the office with a 2-week history of cough and fever. She reports that today she is experiencing left-sided chest pain. Vital signs reveal:

Temperature	38.9°C (102.0°F)
Respiratory rate	26/min
Oxygen saturation	85% on room air

She has coarse rales in the left lower lung field with egophony and increased fremitus. A chest radiograph reveals a large loculated pleural effusion on the left. The most likely diagnosis is

- A. empyema
- B. lung cancer
- C. chylothorax
- D. rheumatoid pleurisy
- E. pancreatitis

99. A 62-year-old woman presents to the office for a follow-up evaluation following a recent visit for fatigue. She has a history of type 2 diabetes. Current medications include metformin 1,000 mg twice daily and aspirin 81 mg daily. She takes no over-the-counter supplements. Physical examination findings are normal. Laboratory studies reveal:

Test	Patient's Value	Reference Range
Hemoglobin	11.5 g/dL	12.0-16.0 g/dL
Hematocrit	34%	35-45%
Mean corpuscular volume	108.0 mcm ³	79.0-93.3 mcm ³
Red blood cell distribution width	12.0%	< 14.5%

Follow-up testing reveals macroovalocytes and hypersegmented neutrophils on a peripheral blood smear. Her reticulocyte count is 1.0% (reference range: 0.5-1.5%), and her vitamin B₁₂ level is 500 pg/mL (reference range: 206-678 pg/mL). The most appropriate next step in this patient's workup is

- A. bone marrow biopsy
 - B. folic acid level
 - C. hepatic function panel
 - D. methylmalonic acid level
 - E. thyroid-stimulating hormone level
100. A 34-year-old gravida 2 para 1 woman presents to the office with a 14-hour history of abdominal pain and a temperature of 38.0°C (100.4°F). She is 10 days postpartum, having delivered a healthy female neonate via repeat cesarean section. The most likely cause for postpartum fever in this patient is
- A. gastroenteritis
 - B. mastitis
 - C. endometritis
 - D. pneumonia
 - E. pyelonephritis

101. A 67-year-old woman presents to the office with a 2-year history of a worsening ache in her left knee. She reports that she plays tennis twice a week and has great difficulty even walking due to the pain by the end of her tennis match. She does not recall any injury. She has been treating her pain at home with ice and rest, which provide some relief. Past medical history reveals hypertension, gastroesophageal reflux disease, and fibromyalgia. Her medications are hydrochlorothiazide 12.5 mg daily and omeprazole 20 mg daily. Examination of the left knee reveals:

- Moderate amount of joint effusion and soft tissue swelling
- Normal range of motion
- Normal skin temperature
- Normal strength and sensation testing results

A radiograph of the knee reveals joint space narrowing and the presence of osteophytes. The most appropriate medication management for this patient is

- A. acetaminophen (Tylenol®)
- B. ibuprofen (Motrin®)
- C. meloxicam (Mobic®)
- D. prednisone (Deltasone®)
- E. tramadol (Ultram®)

102. A 79-year-old woman is brought to the office by her son after she was recently found to be incoherent and confused, swinging her arms at "birds" that she claimed were flying in her room. Past medical history reveals hypertension, type 2 diabetes, overactive bladder, hyperlipidemia, and glaucoma. Her medications are metoprolol (Toprol®), amlodipine (Norvasc®), metformin (Glucophage®), oxybutynin (Detrol®), atorvastatin (Lipitor®), and timolol drops (Timoptic®). Screening results for acute infectious cause are negative. The most appropriate treatment for this patient is to

- A. start alprazolam (Xanax®)
- B. start haloperidol (Haldol®)
- C. start quetiapine (Seroquel®)
- D. stop metformin (Glucophage®)
- E. stop oxybutynin (Detrol®)

103. A 61-year-old man presents to the office with a 6-month history of a lesion on the left side of his face. Physical examination reveals a lesion that is raised, slightly pinkish-red in color, rough, and mildly pruritic. The lesion appears as shown in the exhibit. Which of the following is correct?



- A. a medium-potency steroid is first-line therapy for this lesion
- B. it is a potential premalignant lesion that may progress to squamous cell carcinoma
- C. surgical excision and cryotherapy together have the highest success rate
- D. topical therapy is used only if there is a solitary lesion
- E. urgent referral for Mohs surgery is indicated

- 104.** A 32-year-old gravida 5 para 5 woman presents with her 7-day-old neonate to the office for a health maintenance examination. The mother is concerned because she did not receive a Rho(D) immune globulin injection after she delivered her most recent child. However, she says that she received this injection at the hospital after she delivered her previous 4 children. She would like to know why she did not receive the injection this time and what can be done now. The most appropriate next step is to
- A. check the neonate's blood type and administer the Rho(D) immune globulin injection to the mother only if the neonate is Rh-positive
 - B. inform the mother that it is too late to administer the Rho(D) immune globulin injection and she will only receive it if she gets pregnant again
 - C. obtain a peripheral blood smear of the mother's blood and administer the Rho(D) immune globulin injection only if fetal cells are present
 - D. perform an antibody screen on the mother and administer the Rho(D) immune globulin injection only if the test result is positive
 - E. send the mother to receive the Rho(D) immune globulin injection now

- 105.** A 23-year-old woman presents to the office for evaluation of difficulty sleeping, difficulty concentrating in school, and feeling that her heart is racing. She also complains of diarrhea and a weight loss of 6.8 kg (15.0 lb). The patient says that she recently changed jobs, is attending night classes, and has a lot of financial worries. She says that her mother has brought up the concern that the patient suffers from anxiety. She currently takes no medications. Vital signs reveal:

Temperature	37.0°C (98.7°F)
Blood pressure	112/70 mmHg
Heart rate	110/min

The patient has a body mass index of 22 kg/m². Initial laboratory results reveal a thyroid-stimulating hormone level of less than 0.01 mIU/mL (reference range: 0.4-4.2 mIU/mL). A radioactive iodine uptake study is ordered. What is the diagnostic procedure expected to reveal?

- A. decreased uptake of radioactive iodine
- B. immediate discomfort in the thyroid gland region
- C. increased uptake of radioactive iodine
- D. profuse sweating and diaphoresis on administration of radioactive iodine
- E. swelling of the thyroid gland

106. A 40-year-old woman presents to the emergency department with acute-onset epigastric pain that radiates to her right shoulder and has been present for 8 hours with increasing severity. She rates the pain as an 8 on a scale of 0 to 10 and describes it as colicky. She also reports a 6-hour history of nausea without vomiting. She denies any drug use or smoking and takes no medications. According to the American College of Radiology (ACR), which of the following studies should be ordered to evaluate the differential possibilities for this clinical presentation?

- A. ultrasonography
- B. radiography of the kidneys, ureters, and bladder
- C. CT scan of the abdomen without contrast
- D. CT scan of the abdomen with contrast
- E. MRI with and without contrast

107. A 49-year-old woman presents to the office with the concern of pain in her neck, low back, right shoulder, and left hip. History reveals that the low back pain began while playing baseball when she was a teenager, the neck and right shoulder pain began about 6 months ago while at work as an accountant, and the left hip pain began about 2 weeks ago without known cause. Her pains increase and decrease in intensity but are always present. She rates them as a 6 on a scale of 0 to 10. She says that she feels very fatigued and has difficulty sleeping. Physical examination reveals multiple areas of subjective tenderness throughout the body in 8 separate regions. Results from a complete blood count and basic metabolic profile are normal. Additional laboratory studies reveal:

Test	Patient's Value	Reference Range
Erythrocyte sedimentation rate	7 mm/h	0-20 mm/h
C-reactive protein	0.3 mg/dL	< 0.5 mg/dL
Thyroid-stimulating hormone	2.1 mIU/mL	0.4-4.2 mIU/mL

Which of the following treatments is universally recommended for this condition?

- A. acupuncture
- B. diazepam (Valium®)
- C. fluoxetine (Prozac®)
- D. graduated exercise program
- E. psychological counseling

108. An 8-year-old girl is brought to the emergency department by her parents with the acute onset of a rash on her chest and arms. Her parents report that she was ill yesterday with a red face, clear nasal discharge, soft cough, and a temperature of 37.2°C (99.0°F). The patient has a nontoxic appearance. Physical examination reveals a diffuse maculopapular rash over the trunk and upper forearms that exhibits a slightly raised red border. What is the most likely etiology of this rash?
- A. herpesvirus type 1
 - B. human herpesvirus 6
 - C. parvovirus B19
 - D. *Streptococcus pyogenes*
 - E. varicella-zoster virus
109. A 3-year-old boy is brought to the office by his grandparents for a health maintenance examination. The grandparents say that about once a week, he is uncontrollable and proceeds to kick, scream, and throw objects in the house. Physical examination reveals a well-nourished, well-developed, hyperactive child who is easily distracted. His height and weight are developmentally appropriate. The most appropriate advice to give this patient's grandparents is that
- A. he should be referred to pediatric neuropsychiatry for treatment of oppositional defiant disorder
 - B. he should be screened for attention deficit hyperactivity disorder
 - C. they need to have very tight restrictions within the home environment
 - D. they need to leave the area during a tantrum
 - E. this is considered normal behavior in about 50% of children

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110. A 52-year-old woman presents to the urgent care center with a 3-day history of increasing pain, erythema, and redness in her right lower leg. She also complains of fever and chills. She denies any nausea, emesis, shortness of breath, or cough. She has no known drug allergies. The patient is 1.4 m (4'6") tall and weighs 86 kg (190 lb). Vital signs reveal:

Temperature	39.4°C (103.0°F)
Blood pressure	130/84 mmHg
Respiratory rate	22/min

Physical examination reveals the findings shown in the exhibit. Ultrasound findings are negative for deep vein thrombosis. The most appropriate antimicrobial therapy is



- A. intravenous ciprofloxacin (Cipro®) 250 mg every 12 hours
- B. oral moxifloxacin (Avelox®) 400 mg daily for 5 days
- C. oral azithromycin (Zithromax®) 500 mg for 1 day and 250 mg daily for 4 more days
- D. intravenous penicillin G (Bicillin L-A®) 2 million units every 4 hours
- E. topical mupirocin (Bactroban®) 2% ointment twice daily for 7 days

111. A child presents with the physical examination findings shown in the exhibit. What is a known complication associated with this patient's condition?



- A. acute nephritis
- B. aseptic meningitis
- C. coronary artery aneurysms and arrhythmias
- D. erosive arthritis
- E. postherpetic neuralgia

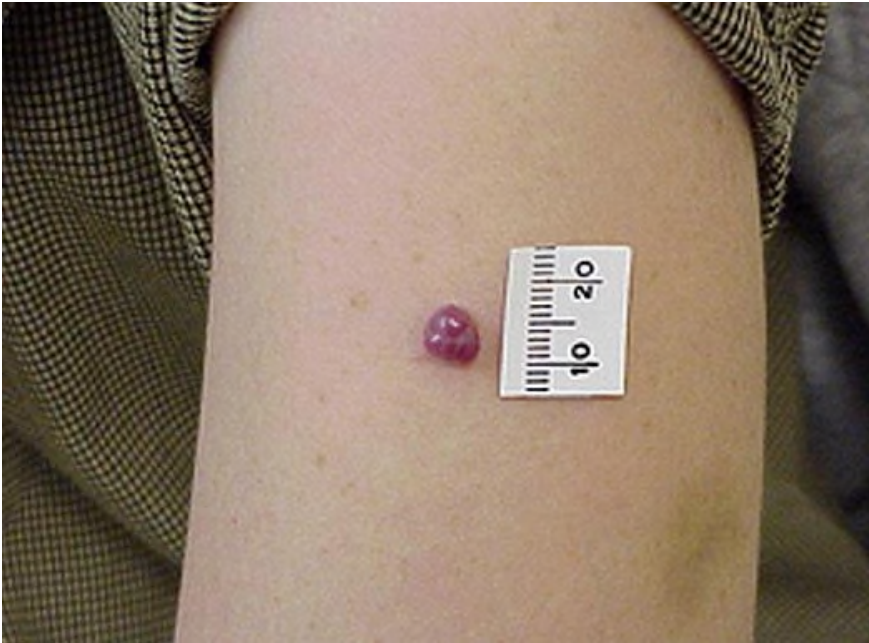
112. A 24-year-old man presents to the office with the concerns of malaise and tender fingers for 2 weeks. The patient reports that he is experiencing homelessness. Physical examination reveals the finding shown in the exhibit. What is the most likely pathogen?



- A. *Enterococcus faecalis*
- B. HACEK group organism
- C. *Staphylococcus aureus*
- D. *Streptococcus bovis*
- E. *Streptococcus viridans*

- 113.** A 65-year-old woman presents with a 1-month history of an ulcer on her lower leg. Past medical history is significant for hypertension and mild heart failure. Current medications include furosemide (Lasix®) and enalapril (Vasotec®). Examination reveals lower leg edema with hyperpigmentation and a shallow 3-cm ulcer located 4 cm above the right medial malleolus. The base of the ulcer is pink. The ankle-brachial index is normal. Her fasting blood glucose level is 98 mg/dL (reference range: 80-115 mg/dL). Which of the following is most likely to enhance the healing of this patient's ulcer?
- A. topical antibiotics
 - B. increased exercise
 - C. wet-to-dry dressings
 - D. compression dressings
 - E. culture-directed systemic antibiotics
- 114.** A 6-year-old boy presents with the concern of left hip pain. His race is reported as Black in his health record. The pain is confined to the joint area and does not radiate. There was no antecedent trauma. It began several months ago as a nagging pain and has gradually worsened until weight-bearing is now almost impossible. Past medical history is significant for anemia, slow-healing ulcers on his lower legs, and spontaneous episodes of leg pain lasting almost 1 week. Examination reveals old scars on the lower legs, painful and reduced range of motion of the left hip, and a grade II-III flow murmur. Abdominal examination findings are benign. A differential diagnosis of his hip pain must include
- A. agranulocytosis
 - B. avascular necrosis of the femoral head
 - C. congenital bone cyst
 - D. congenital dysplasia
 - E. referral from an abdominal organ

115. A 24-year-old woman presents to the office for evaluation of a lesion on her arm that has been present for the past several months. She states that it is growing and easily bleeds. Physical examination reveals the findings shown in exhibit 1 and exhibit 2. The most likely diagnosis is



- A. basal cell carcinoma
- B. eruptive larva migrans
- C. nodular melanoma
- D. pyogenic granuloma
- E. seborrheic keratosis

116. A 5-year-old boy who was recently adopted is brought to the emergency department by his parents with the abrupt and rapidly progressive onset of a sore throat, dysphagia, drooling, distress during inspiration, and high fever. The parents state that their son has a "hot potato" voice and is being restless and irritable. Immunization history is unknown. On examination, the child appears toxic. Pooled secretions in the oral cavity, pharyngeal inflammation, and anterior neck tenderness are noted. A soft-tissue lateral neck radiograph is positive for a "thumb sign." The most likely underlying etiology for this patient's condition is

- A. *Corynebacterium diphtheriae*
- B. *Haemophilus influenzae* type b
- C. genetic predisposition
- D. parainfluenza virus type 1
- E. *Streptococcus pyogenes*

117. A 68-year-old man presents with a 2-day history of worsening dyspnea and increased quantity and purulence of sputum. He formerly smoked and has a history of chronic obstructive pulmonary disease (non-oxygen-dependent). Vital signs reveal:

Temperature	38.3°C (101.0°F)
Blood pressure	140/90 mmHg
Apical heart rate	100/min
Respiratory rate	24/min
Oxygen saturation	80% on room air

Physical examination reveals scattered rhonchi in all lung fields and utilization of the accessory muscles of respiration. Laboratory studies reveal:

Test	Patient's Value	Reference Range
pH	7.30	7.35-7.45
PCO ₂	60 mmHg	35-48 mmHg
PO ₂	55 mmHg	83-108 mmHg
HCO ₃	28 mEq/L	22-30 mEq/L
Leukocyte count	8.0 × 10 ³ /mcL	4.5-11.0 × 10 ³ /mcL
Sodium	140 mEq/L	136-145 mEq/L
Potassium	4.0 mEq/L	3.5-5.1 mEq/L
Chloride	115 mEq/L	98-107 mEq/L
Bicarbonate	22 mEq/L	22-29 mEq/L
BUN	25 mg/dL	6-20 mg/dL
Creatinine	1.50 mg/dL	0.62-1.10 mg/dL

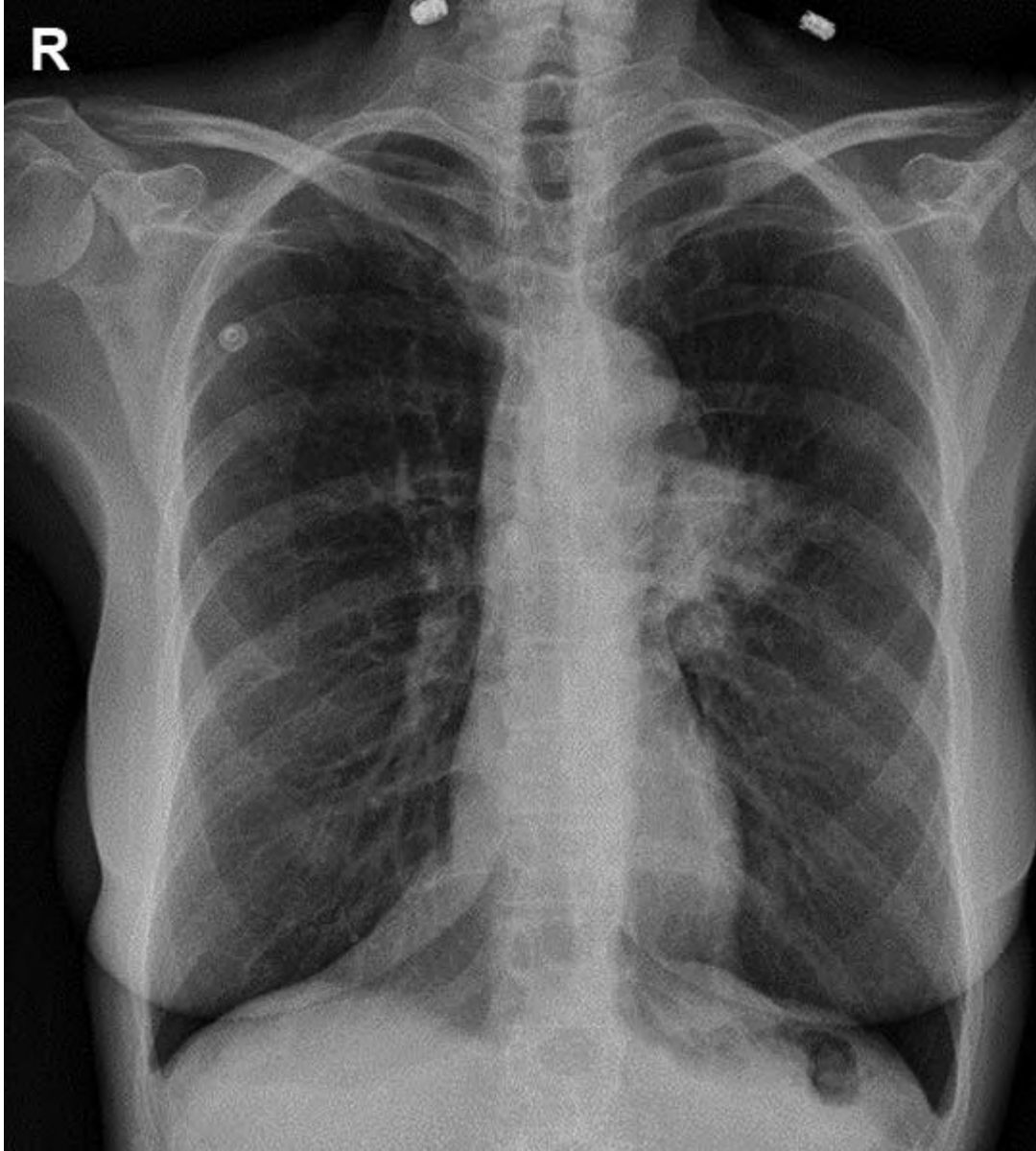
The acid-base status of this patient is

- A. acute respiratory acidosis
- B. compensated metabolic acidosis
- C. compensated metabolic alkalosis
- D. mixed acidosis
- E. respiratory alkalosis

- 118.** A 35-year-old man presents to the emergency department with the concerns of fever, vomiting, altered mental status, and a stiff neck. His spouse reports that he has had a sinus infection for weeks. He is poorly responsive and appears lethargic. Physical examination reveals photophobia. There is no rash. Laboratory studies with blood cultures are ordered. A bedside lumbar puncture reveals an opening pressure of 200 mm H₂O (reference range: 50-180 mm H₂O). The most appropriate immediate empiric antimicrobial therapy for this patient is
- A. ampicillin (Principen®) and gentamicin (Garamycin®)
 - B. cefotaxime (Claforan®) and ampicillin (Principen®)
 - C. vancomycin (Vancocin®) and meropenem (Merrem®)
 - D. vancomycin (Vancocin®), cefepime (Maxipime®), and ampicillin (Principen®)
 - E. vancomycin (Vancocin®), ceftriaxone (Rocephin®), and dexamethasone (Decadron®)
- 119.** Initiation of bisphosphonate therapy for treatment of osteoporosis should be considered in a patient with which of the following DXA scores?
- A. femoral neck T-score of -2.5
 - B. femoral neck Z-score of +2.5
 - C. lumbar spine T-score of -1.5
 - D. lumbar spine Z-score of +1.5
 - E. femoral neck T-score of -1.5
- 120.** A 17-year-old girl is brought in by her mother to establish care. She and her mother are concerned that she has not menstruated yet. Vital signs are normal. Examination reveals a very short girl at 1.4 m (4'8") tall. No secondary sexual characteristics are noted. Follicle-stimulating hormone, luteinizing hormone, and estradiol levels are ordered. Her follicle-stimulating hormone level is elevated. The most appropriate next step is
- A. oral contraceptives
 - B. karyotype analysis
 - C. pelvic ultrasonography
 - D. serum DHEA level
 - E. watchful waiting

- 121.** A 35-year-old woman presents to the office for evaluation of pain and swelling in her hands. She has noticed that her fingers become pale, cyanotic, and painful when she is exposed to cold temperatures. She has also noticed some hard, nodular skin lesions on some of her fingers and small, fine, red, spider vein-like lesions on her cheeks and hands. She reports daily gastroesophageal reflux disease symptoms for over 1 year. Besides an antinuclear antibody titer, testing for which of the following antibodies is most likely to be helpful in confirming her diagnosis?
- A. anti-Jo-1
 - B. anti-Sm
 - C. anticentromere
 - D. anticyclic citrullinated peptide
 - E. antineutrophil cytoplasmic
- 122.** A 55-year-old woman presents to the office for a periodic evaluation of schizophrenia. She has gained 4.5 kg (10.0 lb) since her last visit 3 months ago. Laboratory studies reveal a hemoglobin A1c level of 6.6% (reference range: 4.0-5.6%) and a leukocyte count of $1.6 \times 10^3/\text{mCL}$ (reference range: $4.5\text{-}11.0 \times 10^3/\text{mCL}$). Which of the following medications is most likely to have contributed to her condition?
- A. aripiprazole (Abilify®)
 - B. clozapine (Clozaril®)
 - C. olanzapine (Zyprexa®)
 - D. quetiapine (Seroquel®)
 - E. risperidone (Risperdal®)
- 123.** A 17-year-old boy presents to the office with low back pain after missing the last step of a flight of stairs. You find an inferior ASIS on the right, an inferior PSIS on the right, and a positive standing flexion test result on the left. What is this patient's pelvic dysfunction?
- A. left anteriorly rotated innominate
 - B. left posteriorly rotated innominate
 - C. left superior innominate shear
 - D. right inferior innominate shear
 - E. right posteriorly rotated innominate

124. A 54-year-old woman with a 30 pack-year history of cigarette smoking presents to the office with a 3-month history of productive cough, weight loss, decreased appetite, and nausea. A complete blood count, basic metabolic profile, and thyroid-stimulating hormone level are performed. A chest radiograph is obtained, as shown in the exhibit. Laboratory studies are most likely to reveal which of the following metabolic abnormalities?



- A. hyperkalemia
- B. hyponatremia
- C. hyperthyroidism
- D. hypokalemia
- E. hyponatremia

125. A 4-year-old boy is brought to the office by his parent with a 2-day history of a fever with temperatures up to 40.0°C (104.0°F). His parent reports that the fever started suddenly and that the patient has not been eating or drinking. The patient is drooling pinkish-tinged saliva and appears to be in distress. Physical examination reveals:

- Dry lips with no fissuring
- Small ulceration inside the lower lip
- Bleeding and swollen gum lines
- Small ulcerations along the soft palate
- Tender neck with submandibular and submaxillary lymphadenopathy

The remainder of the examination findings are normal. The most likely cause of this patient's symptoms is

- A. coxsackievirus A16
- B. Epstein-Barr virus
- C. herpesvirus
- D. parvovirus B19
- E. *Streptococcus pyogenes*

126. A 29-year-old woman presents to the office for evaluation of a laceration to the dorsal aspect of her left second metacarpophalangeal joint after she accidentally struck her martial arts partner in the mouth with a closed fist during practice. The event occurred approximately 20 hours ago. She takes no medications and has no allergies. She is not pregnant. Vital signs are normal. Physical examination reveals full movement of the left wrist, hand, and fingers and normal neurovascular findings without active bleeding. Which of the following prophylactic antibiotic regimens is most appropriate for this patient's injury?

- A. amoxicillin-clavulanate (Augmentin®) 875 mg of amoxicillin and 125 mg of clavulanate 2 times daily
- B. ciprofloxacin (Cipro®) 500 mg 3 times daily
- C. clindamycin (Cleocin®) 450 mg 2 times daily
- D. penicillin V potassium (Pen VK®) 500 mg 2 times daily
- E. trimethoprim-sulfamethoxazole (Bactrim DS®) 160 mg of trimethoprim and 800 mg of sulfamethoxazole 2 times daily

127. A 3-year-old boy with known sickle cell anemia presents to the emergency department with his parent, who reports that he has been lethargic for several days. Physical examination findings are unremarkable with the exception of pale conjunctivae. Laboratory studies reveal aplastic anemia. Exposure to which of the following is most likely to result in an aplastic crisis in this child?

- A. coxsackievirus A16
- B. human herpesvirus 6
- C. parvovirus B19
- D. rubeola
- E. varicella-zoster

128. A 68-year-old woman presents to the office to establish care. She reports that all of her previous Pap smear results have been normal and that her last one was 2 years ago. She also notes that all previous mammograms have been read as BI-RADS 1. Her last colonoscopy was 2 years ago and revealed normal findings. She used estrogen therapy at age 50 for 1 year due to vasomotor symptoms and is currently concerned about cancer. She has a 10 pack-year history of smoking cigarettes; she no longer smokes. What is the most appropriate screening recommendation for this patient?

- A. biennial mammography
- B. CA-125 level
- C. colonoscopy in 10 years
- D. low-dose CT scan of the chest
- E. Pap smear with high-risk human papillomavirus testing

129. A 54-year-old woman presents to the office with a 5-day history of constant, watery, nonbloody diarrhea. She also reports feeling light-headed when she stands up. She denies any abdominal pain, weight loss, nausea, or vomiting. History reveals that she completed treatment with oral clindamycin (Cleocin®) within the past week for cellulitis. Vital signs reveal:

Temperature	37.2°C (99.0°F)
Blood pressure	121/72 mmHg
Heart rate	72/min
Respiratory rate	14/min
Oxygen saturation	100% on room air

Physical examination reveals normal integumentary, respiratory, cardiovascular, and abdominal findings. Laboratory studies reveal a leukocyte count of $17.0 \times 10^3/\text{mCL}$ (reference range: $4.5\text{-}11.0 \times 10^3/\text{mCL}$) and a BUN level of 38 mg/dL (reference range: 6-20 mg/dL). Complete metabolic profile results are normal. Stool studies are pending. The most appropriate next step is to

- A. prescribe a 10-day course of oral metronidazole (Flagyl®)
 - B. prescribe a 10-day course of oral vancomycin (Vancocin®)
 - C. prescribe a 14-day course of oral metronidazole (Flagyl®)
 - D. prescribe a 3-day course of oral loperamide (Imodium®) or until symptoms resolve
 - E. recommend that she present to the hospital for admission for intravenous antibiotics
130. A 28-year-old woman with no significant past medical history presents to the office with a 4-day history of productive cough with yellow sputum, temperature of 38.3°C (101.0°F), back pain, chills, and fatigue. She denies any recent travel or sick contacts. Her immunizations are up to date. She has an allergy to macrolides. Physical examination reveals diminished breath sounds in the left upper air field of the lungs. A chest radiograph reveals an infiltrate in the left upper airspace. Which of the following is the most likely causative organism and appropriate antibiotic treatment?
- A. H1N1 influenza; amantadine (Symmetrel®)
 - B. *Pseudomonas pneumoniae*; amoxicillin-clavulanic acid (Augmentin®)
 - C. *Pseudomonas pneumoniae*; vancomycin (Vancocin®)
 - D. *Streptococcus pneumoniae*; doxycycline (Vibramycin®)
 - E. *Streptococcus pneumoniae*; trimethoprim-sulfamethoxazole (Bactrim®)

131. A 2-month-old boy is brought to the office by his mother for a health maintenance examination. His mother has no concerns. Physical examination reveals that the patient's left testis cannot be palpated in the scrotum but can be appreciated in the left inguinal canal. The testis is unmovable. The mother says that this finding was mentioned by her son's previous physician. Which of the following is correct regarding the management of this patient's condition?

- A. no treatment is necessary because there are no serious sequelae
- B. surgical exploration and correction should take place by 12 months of age
- C. urgent surgical referral is indicated
- D. surgical referral is indicated only if undescended by 4 years of age
- E. the first-line treatment is to administer chorionic gonadotropin

132. A 24-year-old woman presents to the office with a 5-day history of a new lesion on her labia. The patient describes the lesion as a painless ulcer with no discharge. She has no additional symptoms. She has no known drug allergies. Social history reveals that the last time she had sexual intercourse was with a new male partner 10 days ago. A full sexually transmitted infection panel reveals:

Test	Patient's Value	Reference Range
HIV (fourth generation)	negative	negative
Herpes Ab titers	pending	negative
Gonorrhea and chlamydia	negative	negative
Rapid plasma reagin titer	1:128	negative
FTA-ABS	reactive	nonreactive

She is given appropriate treatment for her condition. She returns to the office 8 hours after treatment with a diffuse macular rash, fever, chills, nausea, vomiting, and fatigue. The most likely cause of her current symptoms is

- A. allergic reaction to medication
- B. conversion to HIV-positive
- C. serum sickness
- D. anaphylactic reaction
- E. self-limited reaction to antitreponemal therapy

- 133.** A 64-year-old man presents to the office with a 1-year history of generalized abdominal pain, diarrhea, and facial flushing. The patient says that the symptoms are exacerbated by stress, exercise, and alcohol intake. The flushing episodes last from 30 seconds to 30 minutes and are localized to the face, neck, and upper chest. Past medical history is otherwise unremarkable, and he takes no medications. Which of the following tests is most appropriate to order to confirm the suspected diagnosis?
- A. 24-hour urine 5-hydroxyindoleacetic acid test
 - B. 24-hour urine catecholamine levels
 - C. calcitonin radioimmunoassay
 - D. serum angiotensin-converting enzyme level
 - E. serum thyroid-stimulating hormone level
- 134.** A 43-year-old woman presents with a 3-day history of colicky right upper quadrant abdominal pain. She reports that the pain is worse after she eats fatty foods. On examination, the pain radiates from ribs 6-8 on the right to the right scapular region and the right shoulder and neck. Which of the following nerves is responsible for this patient's right shoulder and neck pain?
- A. greater splanchnic
 - B. least splanchnic
 - C. lesser splanchnic
 - D. phrenic
 - E. vagus
- 135.** A 27-year-old man presents to the office with a 3-day history of malaise, rhinorrhea, cough, and sinus congestion. He reports that his left ear feels plugged and pops open. The Galbreath technique may help this patient's condition by
- A. balancing the autonomic tone to allow for better self-regulation of the tissue response
 - B. creating tension on the tensor veli palatini muscle and opening the eustachian tube
 - C. increasing negative thoracic pressure to decrease the sinus tissue congestion
 - D. manually moving lymph along the anterior cervical lymph nodes
 - E. reducing sympathetic tone to the sinuses, leading to decreased tissue congestion

- 136.** A 3-year-old boy is brought to the office by his mother with a 4-day history of fussiness and a temperature of 38.2°C (100.8°F). She reports that he has been pulling on his right ear. She notes that he has been eating well and voiding appropriately. On questioning, he states that his ear hurts and that he wants to feel better. Physical examination reveals erythema of the tympanic membrane and loss of the cone of light. C5 is flexed, rotated right, sidebent right. The most appropriate initial step is to
- A. perform myofascial release of C5
 - B. perform the Galbreath technique
 - C. start amoxicillin (Amoxil®) 40 to 50 mg/kg daily, divided into twice-per-day dosing
 - D. start amoxicillin (Amoxil®) 80 to 90 mg/kg daily, divided into twice-per-day dosing
 - E. start ciprofloxacin (Cipro®) otic drops 0.25 mL in the right ear every 12 hours
- 137.** A 29-year-old gravida 4 para 3 woman at 32 weeks' gestation presents with the concern of low back pain and sacral region tenderness. Structural examination reveals:
- Positive seated flexion test result on the right
 - Sacral sulcus deep on the left
 - Inferior lateral angle posterior and inferior on the right
 - Positive lumbar spring test result
 - Transverse process of L5 posterior on the left
- The most likely diagnosis is
- A. left-on-left sacral torsion
 - B. left-on-right sacral torsion
 - C. posterior sacral torsion on a right oblique axis
 - D. right-on-left sacral torsion
 - E. right-on-right sacral torsion
- 138.** A 42-year-old woman presents to the office with a 1-week history of crampy right upper quadrant abdominal pain. The pain worsens after high-fat meals and is associated with nausea and loose, clay-colored stools. Structural examination is most likely to reveal which of the following viscerosomatic findings?
- A. C7-T3 neutral, sidebent left, rotated right
 - B. T2 extended, rotated right, sidebent right
 - C. T3-T4 neutral, sidebent right, rotated left
 - D. T7-T8 neutral, sidebent left, rotated right
 - E. T11-L2 neutral, sidebent left, rotated right

- 139.** A neonate is evaluated in the newborn nursery after being born to an insulin-dependent mother with gestational diabetes. The patient is large for gestational age, and the delivery was complicated by left shoulder dystocia. Physical examination reveals that the left shoulder is limp but the left hand is flexed. The patient is otherwise breathing and eating well. What nerve root was most likely injured during the delivery of this patient?
- A. C1-C2
 - B. C3-C4
 - C. C5-C6
 - D. C8-T1
 - E. T2-T4
- 140.** A 14-year-old girl presents to the office with a 4-month history of worsening right low back pain. The patient plays volleyball and has begun preseason training. She denies injury but says that the pain worsens when she walks up stairs. She was treated last week with muscle energy for a right posterior innominate dysfunction, which has recurred. Examination of the pelvis reveals that the pain is posterior around the sacroiliac joint. The most likely cause for the refractory pain in this patient is
- A. ankylosing spondylitis
 - B. anterolisthesis
 - C. biceps femoris spasm
 - D. lumbar compression fracture
 - E. rectus femoris spasm
- 141.** A 12-year-old boy is brought to the office with a 5-week history of midback pain. He is a competitive gymnast. He denies any recent trauma or injury. Structural examination reveals tenderness at T5-T7 with congruent paraspinal hypertonicity and T5-T7 neutral, sidebent left, rotated right. Chest radiographs reveal a nondisplaced fracture on the left T6 pars interarticularis. The most appropriate next step in the management of this patient is to prescribe an antiinflammatory medication and
- A. perform facilitated positional release to T7
 - B. perform high velocity, low amplitude to T5
 - C. perform muscle energy to T5-T7
 - D. recommend rest and restriction of sports participation
 - E. refer him to a pediatric orthopedic surgeon

- 142.** Structural examination of a patient reveals a positive standing flexion test result on the left. The ASIS is superior on the left, the pubic symphysis is superior, and the PSIS is inferior on the right. What is the most likely diagnosis?
- A. anterior innominate rotation on the left
 - B. anterior innominate rotation on the right
 - C. posterior innominate rotation on the right
 - D. superior innominate shear on the left
 - E. superior innominate shear on the right
- 143.** A patient presents to the office with irritable bowel syndrome, diarrhea predominant. Which of the following findings is most likely to be present on structural examination?
- A. C5 flexed, sidebent right, rotated right
 - B. exhalation dysfunction at rib 5
 - C. firm nodule over the right fourth intercostal space
 - D. T1-T4 neutral, sidebent right, rotated left
 - E. T10-T12 neutral, sidebent right, rotated left
- 144.** Which of the following biomechanical changes is most likely to be found on structural examination of a pregnant patient compared to a nonpregnant patient?
- A. anterior tilt of the pelvis
 - B. improved venous congestion
 - C. increased diaphragmatic excursion
 - D. narrowed gait
 - E. straightening of the lumbar lordotic curve
- 145.** A 24-year-old patient presents to the office after an inversion sprain of the left ankle. Physical examination reveals a negative anterior drawer test result and ease of motion with posterior glide of the left fibular head. Utilizing muscle energy, which of the following muscles should the patient activate to treat the somatic dysfunction?
- A. extensor digitorum longus
 - B. flexor digitorum brevis
 - C. gastrocnemius
 - D. quadratus plantae
 - E. tibialis posterior

- 146.** A 63-year-old man presents to the emergency department with the concern of substernal chest pressure that radiates to the left arm and is associated with diaphoresis. The patient took 2 sublingual nitroglycerin (Nitrostat®) tablets during transport prior to arrival. His troponin I level is 0.06 ng/dL (reference range: 0.00-0.04 ng/dL). This patient would likely demonstrate parasympathetically mediated structural examination findings in which region?
- A. OA-C2
 - B. C3-C5
 - C. T1-T4
 - D. T5-T9
 - E. S2-S4
- 147.** Which of the following most likely provides the preganglionic sympathetic innervation to the celiac ganglion?
- A. greater splanchnic nerve
 - B. L1-L2
 - C. least splanchnic nerve
 - D. lesser splanchnic nerve
 - E. T1-T4

- 148.** A 50-year-old man presents to the office with the concerns of fever, productive cough, and fatigue. The patient's symptoms have gradually worsened over the past 2 weeks; the fever has been intermittent for the past week, with a maximum temperature of 38.3°C (101.0°F). He received an influenza vaccine last month, does not smoke, and reports no sick contacts. Past medical history is significant for hyperlipidemia. A COVID-19 test result is negative. Vital signs reveal:

Temperature	38.2°C (100.8°F)
Blood pressure	130/80 mmHg
Heart rate	80/min
Respiratory rate	20/min
Oxygen saturation	99% on room air

Physical examination reveals:

- Diffuse coarse breath sounds bilaterally
- Decreased breath sounds in the right lower lobe
- No extremity edema or warmth

The most appropriate next step in this patient's treatment is to

- A. defer osteopathic manipulative treatment until the fever is resolved
- B. perform facial effleurage
- C. perform myofascial iliotibial band release
- D. perform thoracic lymphatic pump
- E. treat the posterior Chapman reflex point at the tip of the transverse process of C1

- 149.** Which of the following is an absolute contraindication to counterstrain treatment of a posterior occipital tender point?

- A. dens malformation
- B. difficulty relaxing cervical muscles
- C. flaring rheumatoid arthritis
- D. vertebral artery disease
- E. slurred speech in the treatment position

- 150.** A 92-year-old patient presents to the office for a follow-up evaluation 2 days after being discharged from the hospital. The patient was admitted for viral pneumonia and was treated with nebulizers, oxygen, and osteopathic manipulative treatment. Which of the following treatments best incorporates the respiratory-circulatory osteopathic model?
- A. antibiotic therapy
 - B. flutter-valve mucus clearance device
 - C. nutrition consultation
 - D. smoking cessation counseling
 - E. trending pulse oximetry
- 151.** A patient presents to the office with a 2-day history of left flank pain. Today, the patient has also experienced bloody urine, dysuria, and a fever with temperatures up to 38.5°C (101.3°F). A radiograph reveals a proximal ureteral stone. At which of the following locations would facilitation from this illness manifest?
- A. T1-T4
 - B. T5-T9
 - C. T10-T12
 - D. L1-L2
 - E. L3-L5
- 152.** Which of the following patients is the best candidate for a counterstrain technique?
- A. a frail, elderly patient
 - B. a patient with a fracture in the area used to treat the dysfunction
 - C. a pediatric patient who has difficulty remaining still
 - D. an anxious patient who cannot voluntarily relax
 - E. an athlete with a known torn ligament in the affected area

153. A male patient presents to the urgent care center due to an acute ankle injury that occurred 1 hour ago. The patient says that he tripped over a curb while intoxicated and fell onto the sidewalk, rolling his ankle. He is able to bear weight on his leg, but he experiences pain on the lateral aspect of the leg. Physical examination reveals:

- Bruising and swelling over the lateral ankle
- Tenderness of the anterior, inferior, and posterior aspects of the lateral malleolus
- Limited dorsiflexion
- Decreased anterior glide of the fibular head with point tenderness
- Mild swelling of the proximal posterior fibular region
- Negative talar drawer and tilt test results

The patient has some difficulty following commands due to his intoxication. The most appropriate next step in this patient's management is to

- A. administer a high-dose nonsteroidal antiinflammatory drug
- B. discharge him with a removable ankle brace
- C. obtain radiographs of the ankle and knee
- D. perform muscle energy to the fibular head and ankle
- E. refer the patient to orthopedic surgery

154. A 46-year-old woman presents to the office for a follow-up evaluation of chronic headaches and upper back pain. She says that she has daily headaches and difficulty sleeping. She is tearful and frustrated. She has been treated unsuccessfully with analgesics, muscle relaxants, and mood stabilizers without relief. The Adverse Childhood Experiences Questionnaire is administered, and the patient scores a 6/10. After discussion, she says that she would like to try osteopathic manipulative treatment for her headaches. Which of the following techniques has been shown to help patients accept physical touch as part of trauma-informed care and practice?

- A. coaching the patient on utilizing breathing techniques for diaphragmatic release and relaxation
- B. coaching the patient on utilizing Emotional Freedom Techniques (EFT) 30 minutes prior to osteopathic manipulative treatment
- C. coaching the patient through progressive muscle relaxation exercises
- D. providing the patient with educational materials that define and explain osteopathic manipulative techniques and treatments
- E. reviewing the areas of the body that will benefit from treatment and explaining how the physician's hands will be used to provide that treatment

- 155.** Which of the following most accurately describes the activating force of high velocity, low amplitude?
- A. direct force away from the anatomic barrier
 - B. direct force toward the neutral position
 - C. direct force toward the restrictive barrier
 - D. indirect force away from the elastic barrier
 - E. indirect force toward the neutral position
- 156.** When positioning a patient to treat the rhomboid muscles with counterstrain, the upper extremity should be positioned in
- A. extension and abduction
 - B. extension and adduction
 - C. flexion and abduction
 - D. flexion and adduction
 - E. flexion only
- 157.** An 86-year-old patient is admitted to the hospital due to an exacerbation of chronic obstructive pulmonary disease. Past medical history is significant for severe osteoporosis. The patient is stable on 4 L/min of oxygen via nasal cannula. Physical examination reveals bilateral rhonchi and diffuse wheezes. The patient is supine in the hospital bed and is too fatigued to sit up in a chair. Which of the following osteopathic manipulative techniques is most likely to help reduce the mechanical restrictions of this patient's presenting condition?
- A. high velocity, low amplitude to the cervical spine
 - B. osteopathic cranial manipulative medicine to the occipitomastoid sutures
 - C. seated thoracic postisometric muscle energy
 - D. supine rib raising
 - E. thoracic inlet myofascial release
- 158.** Osteopathic cranial manipulative medicine can most safely be used to treat somatic dysfunctions in which of the following settings?
- A. coagulopathies
 - B. increased intracranial pressure
 - C. postconcussion syndromes
 - D. skull fractures
 - E. space-occupying lesions

- 159.** When treating an exhalation dysfunction at rib 4 on the left with muscle energy, patient contraction of which of the following muscles should be utilized?
- A. latissimus dorsi
 - B. pectoralis minor
 - C. scalenus anterior
 - D. scalenus posterior
 - E. serratus anterior
- 160.** A 6-year-old patient is brought to the office for a follow-up evaluation of acute otitis media. An initial diagnosis was given 4 days ago, and the patient was treated appropriately with Galbreath technique. Which of the following techniques is most appropriate to perform prior to repeating the Galbreath technique?
- A. cranial vault hold for sphenobasilar synchondrosis torsion
 - B. high velocity, low amplitude to the cervical spine
 - C. infraorbital nerve stimulation
 - D. pétrissage to the sinuses
 - E. thoracic inlet release
- 161.** A 79-year-old man presents to the office accompanied by his daughter after he tripped on a rug at home and fell onto his right shoulder. His daughter says that this is his fifth fall this year. The patient says that he feels less steady when he walks. Vital signs are normal. Physical examination reveals point tenderness in the middle of the muscle that is superior to the spine of the scapula. Range of motion is normal, and strength is appropriate. He is slow to rise from the chair and has a difficult time getting onto the table. What is the most appropriate management of this patient?
- A. obtain a 3-view shoulder radiograph and refer him to a supervised exercise program
 - B. obtain a 3-view shoulder radiograph and refer him to orthopedics for evaluation
 - C. perform osteopathic manipulative treatment and refer him to a supervised exercise program
 - D. perform osteopathic manipulative treatment and refer him to orthopedics for evaluation
 - E. refer him to physical therapy and prescribe nonsteroidal antiinflammatory drugs

- 162.** An 85-year-old man with metastatic colon cancer to the lumbar spine and lungs recently decided to take a palliative approach to his medical condition. He was admitted to an extended care facility, as his spouse can no longer take care of him at home. Which of the following techniques will most likely help prevent a known complication of this patient's bedridden state?
- A. cervicothoracic rib raising to improve appetite
 - B. muscle energy to T10-L2 to stimulate sympathetic tone to the colon
 - C. OA release to stimulate vagal tone to decrease bronchial secretions
 - D. soft tissue technique to T10-T11 to increase sympathetic tone to the kidneys
 - E. thoracolumbar rib raising to improve aeration of the lungs
- 163.** Which of the following most accurately describes the axis(es) and motions of the sphenoid and occiput during torsion of the sphenobasilar synchondrosis?
- A. rotation in opposite directions around 2 parallel vertical axes and rotation in the same direction around an anteroposterior axis
 - B. rotation in opposite directions around an anteroposterior axis
 - C. rotation in the same direction around 2 parallel horizontal axes
 - D. rotation in the same direction around 2 parallel vertical axes
 - E. rotation in opposite directions around 2 parallel horizontal axes
- 164.** A 78-year-old man presents to the office with a 5-month history of perineal pain, increased urinary frequency, nocturia, and a weak stream. Urinalysis results are normal; his prostate-specific antigen level is 7.5 ng/mL (reference range: 0.0-6.5 ng/mL). Digital rectal examination reveals a mildly tender, enlarged prostate. Which of the following structural examination findings is most likely to have been present in this patient?
- A. cool, boggy tissue at T12-L2
 - B. edematous, moist tissue at T12-L2
 - C. edematous, pea-sized nodule 1 cm inferior to the umbilicus
 - D. ropey, dry tissue at T10-T11
 - E. warm, tender tissue at T10-T11

- 165.** A 48-year-old woman presents to the office with a 2-month history of intermittent headaches. Past medical history is significant for rheumatoid arthritis. Imaging studies reveal ligamentous instability of the alar ligaments. Which of the following treatments is absolutely contraindicated for this patient's condition?
- A. balanced membranous tension to treat a left torsion
 - B. counterstrain to the AC3 tender point on the left
 - C. counterstrain to the PC1 inion tender point
 - D. high velocity, low amplitude to T1-T4
 - E. high velocity, low amplitude to the AA joint
- 166.** A 15-year-old girl presents to the office for a health maintenance examination. Oral examination reveals several brown spots on the teeth that cause concern for potential caries. The patient's medication history is reviewed. Which of the following medications is most likely to increase the patient's risk of this condition?
- A. acetaminophen (Tylenol®)
 - B. doxycycline (Adoxa®)
 - C. fluticasone (Flovent®)
 - D. ibuprofen (Advil®)
 - E. montelukast (Singulair®)
- 167.** An 8-year-old boy is brought to the office for evaluation of chronic knee pain that has caused him to miss school several times over the past 4 weeks. The patient's parents say that they have noticed an intermittent limp that improves with walking. They also report the intermittent presence of a pruritic, macular rash that is not responsive to antihistamines and daily fevers above 38.3°C (101.0°F) that resolve without specific treatment by late afternoon. Physical examination reveals erythema and swelling of the left knee, but no rash is present. Full flexion of the knee is limited. The remainder of the examination findings are normal. What is the most likely diagnosis?
- A. juvenile idiopathic arthritis
 - B. Kawasaki disease
 - C. leukemia
 - D. Lyme disease
 - E. Osgood-Schlatter disease

- 168.** Which of the following is an absolute contraindication for any lymphatic osteopathic manipulative technique?
- A. acute deep vein thrombosis in the left common femoral vein
 - B. acute heart failure with reduced ejection fraction
 - C. bacterial endocarditis
 - D. non-Hodgkin lymphoma
 - E. untreated anuria
- 169.** A 69-year-old woman presents to the office with a 1-week history of acute-onset neck stiffness and upper back pain. Questioning reveals that her pain is at its worst in the morning and slightly improves throughout the day. Nonsteroidal antiinflammatory drugs have not provided relief. Review of records reveals that she recently was seen in the emergency department, and her erythrocyte sedimentation rate was 120 mm/h (reference range: 0-20 mm/h). Her complete blood count and basic metabolic profile results were normal. Treatment with oral corticosteroids promptly resolves her symptoms. The most likely diagnosis is
- A. fibromyalgia
 - B. lymphoma
 - C. polymyalgia rheumatica
 - D. thoracic osteoporosis
 - E. thoracic somatic dysfunction
- 170.** A 16-year-old boy is brought to the emergency department by his parents after he was potentially exposed to a bat in his bedroom. The bat escaped through an open window. The patient reports no history of actual exposure to the bat, and physical examination reveals no evidence of any injury from the episode. The parents question if rabies vaccination is warranted. The most appropriate management for this patient is to
- A. administer rabies immune globulin (RIG) and the standard rabies vaccine series
 - B. administer rabies immune globulin (RIG) but hold the standard rabies vaccine series
 - C. administer the standard rabies vaccine series alone without rabies immune globulin (RIG)
 - D. recommend close observation without any vaccinations
 - E. refer the patient to the local health department for care

- 171.** A 54-year-old man presents to the office with a 3-month history of occasional dizziness, worsening fatigue, and dyspnea on exertion. Past medical history reveals hypertension and untreated obstructive sleep apnea. Physical examination findings are normal. Results from a complete blood count and complete metabolic profile are normal. An ECG reveals normal findings. A chest radiograph reveals mild ventricular enlargement. What is the most appropriate next step in this patient's management?
- A. order a B-type natriuretic peptide level
 - B. order echocardiography
 - C. order pulmonary function testing
 - D. refer him to a cardiologist
 - E. refer him to a pulmonologist
- 172.** A 78-year-old man is brought to the office by extended care facility staff for evaluation of chronic incontinence. Past medical history is significant for advanced Alzheimer disease. He has no other chronic medical conditions and is able to participate in group activities. His nurse reports that since admission, he has been chronically wetting his diaper. She is concerned because she has noticed an increased breakdown in the perineal skin, and she would like a treatment for his incontinence. What is the most appropriate initial treatment plan for this patient?
- A. development of a voiding schedule
 - B. initiation of tamsulosin (Flomax®)
 - C. initiation of tolterodine (Detrol®)
 - D. placement of an indwelling urinary catheter
 - E. recommendation of pelvic muscle exercises
- 173.** Cervical spine segmental examination of a patient demonstrates that the occiput translates more easily to the left than the right. This finding becomes more symmetrical in extension. Which of the following directions of thrust is most appropriate to treat this dysfunction with high velocity, low amplitude?
- A. extension, sidebending right, rotating right
 - B. extension, sidebending right, rotating left
 - C. flexion, sidebending left, rotating left
 - D. flexion, sidebending left, rotating right
 - E. pure translation to the right

- 174.** Somatic dysfunction of the cranial base, between the occiput and temporal bone, impacting the jugular foramen is most likely to affect the function of which of the following cranial nerves?
- A. facial
 - B. hypoglossal
 - C. trigeminal
 - D. vagus
 - E. vestibular
- 175.** A 28-year-old man with a history of seasonal allergies complains of frontal headaches, maxillary sinus tenderness, and postnasal drip. Which of the following segmental levels would most likely exhibit a sympathetically mediated viscerosomatic reflex associated with the patient's condition?
- A. OA-C2
 - B. C3-C5
 - C. T1-T4
 - D. T5-T9
 - E. T10-T12
- 176.** A neonate presents with irritability, poor feeding, and difficulty suckling. Which of the following somatic dysfunctions would most likely produce these symptoms?
- A. C2 flexed, rotated left, sidebent left
 - B. T2 extended, rotated left, sidebent left
 - C. compression of the condylar parts of the occiput
 - D. compression of the left sphenosquamous suture
 - E. left sidebending rotation
- 177.** A patient presents to the office with right-on-right sacral torsion. To utilize muscle energy, how should the patient be positioned?
- A. lying on the left side with the torso turned to the left
 - B. lying on the left side with the torso turned to the right
 - C. lying on the right side with the torso turned to the left
 - D. lying on the right side with the torso turned to the right
 - E. supine with both knees to the chest

- 178.** A 76-year-old woman presents to the office with low back pain after she lifted some boxes in her home 3 weeks ago. Past medical history reveals lumbar spondylosis. On examination, the transverse processes of all 5 lumbar vertebrae are prominent on the right, although the L2 transverse process is particularly tender with a firm, articular end feel. Unlike the rest of the lumbar segments, which freely translate from left to right, the L2 segment resists translation from left to right. When the patient extends her back, the L2 transverse process becomes less prominent. What is the most likely key somatic dysfunction in the lumbar spine?
- A. L1-L5 neutral, sidebent left, rotated right
 - B. L1-L5 neutral, sidebent right, rotated left
 - C. L2 extended, rotated left, sidebent left
 - D. L2 extended, rotated right, sidebent right
 - E. L2 flexed, rotated right, sidebent right
- 179.** A 70-year-old man presents to the office with his spouse for a periodic evaluation of Alzheimer disease. He has been treated with donepezil (Aricept®) 10 mg at bedtime for the past 6 months. He has not reported any adverse effects, but his spouse says that there has been no change or improvement since starting the medication. She is concerned because he is currently taking 6 medications daily for other chronic medical conditions. What is the most appropriate recommendation for this patient?
- A. add memantine (Namenda®) 7 mg daily
 - B. continue current medications and reevaluate in 6 months
 - C. discontinue donepezil (Aricept®) now
 - D. increase donepezil (Aricept®) to 23 mg daily
 - E. taper off donepezil (Aricept®) for a trial period
- 180.** Which of the following biomechanical alterations is most commonly seen in an 83-year-old patient?
- A. decreased baseline level of flexion of the thoracic spine, knees, and hips
 - B. extension posture of the cervical, thoracic, and lumbar spine
 - C. flattening of the lumbar lordosis and an increased thoracic kyphosis
 - D. increased baseline level of flexion of the lumbar spine
 - E. patency of the cranial sutures with robust cranial motion

181. A 15-year-old girl presents to the office with a 2-day history of a sore throat and general malaise. She denies any cough. She has no known medication allergies. Her temperature is 36.8°C (98.3°F). Physical examination reveals nontender anterior cervical lymph nodes and exudates on the tonsils bilaterally. The remainder of the examination findings are normal. What is the most appropriate next step in this patient's management?

- A. offer supportive measures to manage symptoms
- B. perform a rapid antigen detection test for group A streptococcus
- C. refer her to an otolaryngologist for consideration of tonsillectomy
- D. treat the patient empirically with a 10-day course of a macrolide antibiotic
- E. treat the patient empirically with an antiviral medication

182. Which of the following β -blockers are not only nonselective but also have α -blocking activity?

- A. atenolol (Tenormin®) and pindolol (Visken®)
- B. bisoprolol (Zebeta®) and nebivolol (Bystolic®)
- C. carvedilol (Coreg®) and labetalol (Trandate®)
- D. nadolol (Corgard®) and metoprolol (Lopressor®)
- E. sotalol (Betapace®) and propranolol (Inderal®)

183. A 22-year-old man presents to the office with a 3-day history of right ankle pain after a soccer game. He had planted his right foot to kick the ball with his left, but his momentum carried him, and he ended up falling forward. Since that time, his ankle has felt "stuck," with pain in the midline over the ankle mortise. Examination of the ankle does not indicate any ligamentous injury. The right ankle has a noted preference for dorsiflexion over plantar flexion, with a hard, articular end feel on the end range of plantar flexion. To address this patient's somatic dysfunction with high velocity, low amplitude, how should a thrust be directed?

- A. anterior thrust to the distal tibia-fibula
- B. anterior thrust to the fibular head
- C. posterior thrust to the distal tibia-fibula
- D. posterior thrust to the fibular head
- E. posterior thrust to the talus

- 184.** On structural examination, a scapula positioned more superiorly than normal implies the presence of hypertonic or contracted musculature most likely involving which of the following muscles?
- A. latissimus dorsi
 - B. levator scapulae
 - C. lower serratus anterior
 - D. lower trapezius
 - E. teres minor
- 185.** In a postsurgical patient, treatment of which of the following regions is most likely to help prevent postoperative ileus by addressing the parasympathetic contribution to this condition?
- A. OA-C2
 - B. C3-C5
 - C. T1-T4
 - D. T5-T11
 - E. S2-S4
- 186.** A 16-year-old girl presents to the office with a 10-day history of pelvic pain. Questioning reveals that she is sexually active. Pelvic examination reveals purulent vaginal discharge, cervical erythema, and cervical motion tenderness. The patient is prescribed antibiotics. Osteopathic manipulative treatment of which of the following dysfunctions is most likely to improve parasympathetic tone to the involved tissues?
- A. L1 flexed, rotated left, sidebent right
 - B. L2-L4 neutral, sidebent right, rotated left
 - C. OA extended, sidebent left, rotated right
 - D. right-on-left sacral torsion
 - E. T10-T12 neutral, sidebent right, rotated left

- 187.** A 68-year-old woman presents to the office with a 7-year history of right footdrop and paresthesia in the lateral half of her right lower extremity and the top of her right foot. Past medical history reveals that the patient underwent right hip arthroplasty for primary osteoarthritis of the acetabulum 7 years ago and was told that her symptoms were a surgical complication. Today, the appropriate region is treated with muscle energy, leading to a complete resolution of the patient's paresthesia but not the footdrop. Which area of dysfunction was most likely treated?
- A. L5 flexed, rotated right, sidebent right
 - B. posterior fibular head on the right
 - C. posterior innominate rotation on the right
 - D. right-on-right sacral torsion
 - E. superior innominate shear on the right
- 188.** A 68-year-old woman presents to the emergency department with a 2-week history of fatigue and exertional dyspnea. Review of systems is unremarkable. Past medical history reveals essential hypertension, for which she takes an angiotensin-converting enzyme inhibitor and aspirin. Laboratory study results from 2 weeks ago were normal. Her blood pressure is 90/60 mmHg; vital signs are otherwise normal. Structural examination reveals a gangliform contraction located between the spinous and transverse processes of T2-T3 on the left. The remainder of the examination findings are normal. What is the most appropriate next step in this patient's management?
- A. chest radiography and orthostatic blood pressure
 - B. circular massage over the gangliform contraction
 - C. counterstrain in thoracic extension
 - D. ECG and troponin I level
 - E. osteopathic manipulative treatment
- 189.** A 67-year-old man presents to the office for a periodic evaluation of chronic obstructive pulmonary disease (COPD). His symptoms are currently managed with an as-needed short-acting β -agonist inhaler. He has not had any exacerbations in the past year. His COPD Assessment Test (CAT) score is 16. What is the most appropriate initial addition to his management plan?
- A. inhaled corticosteroid combined with a long-acting β -agonist
 - B. inhaled corticosteroid combined with a short-acting β -agonist
 - C. long-acting muscarinic antagonist combined with a long-acting β -agonist
 - D. prednisone (Deltasone®) 40 mg once daily for 30 days
 - E. roflumilast (Daliresp®) 250 mcg once daily for 30 days

- 190.** An 89-year-old woman presents to the office with the concern of gradually progressive bilateral knee pain for the past several years. She describes the pain as a diffuse aching sensation throughout the joint without point tenderness. She denies any associated joint swelling or morning stiffness and says that the pain is worse at the end of the day. The patient does not take any medications. Physical examination reveals obvious bony overgrowth and crepitus without warmth or effusion. Which of the following is the most appropriate initial treatment for this patient's pain?
- A. bisphosphonate
 - B. glucosamine and chondroitin sulfate
 - C. massage therapy
 - D. topical nonsteroidal antiinflammatory drug
 - E. transcutaneous electrical nerve stimulation (TENS)
- 191.** A 35-year-old man presents to the office with a 6-month history of an elbow rash. He describes the rash as a red and raised patch on both elbows. It is mildly pruritic intermittently and nontender. He denies any associated fever, chills, or joint pain. Physical examination reveals sharply demarcated, erythematous, scaly patches bilaterally on approximately 15% of the total skin area. No other lesions are present. What is the most appropriate initial therapy for this patient?
- A. oral doxycycline (Vibramycin®)
 - B. oral ustekinumab (Stelara®)
 - C. oral valacyclovir (Valtrex®)
 - D. targeted phototherapy
 - E. topical clindamycin (Cleocin T®)

- 192.** A 25-year-old woman presents to the office with the concern of anxiety after she was involved in a car accident about a month ago. She was a passenger in a car that was hit on the driver side and rolled over. She reports that the driver, a friend of hers, was injured badly and is still hospitalized. She underwent evaluation in the emergency department after the event and, other than some moderate soreness in her chest and neck, was discharged without significant injuries. Since then, she says that she avoids going in the car. When she does have to drive somewhere, she feels very anxious, gets sweaty, and starts breathing heavily. She says that she replays the accident in her head over and over again, though she has trouble remembering all the details of the event. She feels that she is always on edge and irritable, often has difficulty concentrating, and has struggled with falling asleep at night. She denies any suicidal ideation. What is the most appropriate initial treatment strategy for this patient?
- A. offer pharmacotherapy with a benzodiazepine
 - B. offer pharmacotherapy with a selective serotonin reuptake inhibitor
 - C. offer pharmacotherapy with a tricyclic antidepressant
 - D. refer her for cognitive-behavioral therapy
 - E. refer her for trauma-based psychotherapy
- 193.** A 50-year-old woman presents to the office with low back pain after she bent forward and twisted to lift a box at work. She says that the pain radiates from her low back to the right side of her groin. She denies any numbness, tingling, weakness, or increase of pain with coughing or sneezing. Neurologic examination reveals normal findings. Structural examination reveals that L1 demonstrates a preference for ease of motion to right rotation and right sidebending during flexion, and L2-L5 demonstrates a preference for ease of motion to left rotation and right sidebending with no change in flexion or extension. A Thomas test result is positive on the right. What is the most appropriate initial positioning for using muscle energy to treat the patient's most significant somatic dysfunction?
- A. left lateral recumbent position with the torso turned to the left, lumbar flexion, both hips flexed, and both feet off the table
 - B. left lateral recumbent position, right lumbar rotation, both hips flexed to 90 degrees, and both feet off the table
 - C. left lateral recumbent position, right lumbar rotation, right hip flexed, and right foot off the table
 - D. right lateral recumbent position, lumbar extension, left lumbar rotation, and left hip abduction
 - E. right lateral recumbent position, lumbar flexion, right lumbar rotation, and left hip abduction

- 194.** A 26-year-old woman presents to the office with a 2-week history of right-sided chest pain. She denies radiation of the pain or shortness of breath. Cardiac and pulmonary examination findings are normal. Structural examination reveals tenderness at the level of ribs 6-7 on the right. There is equal cephalad movement of these ribs during inhalation on the left and right side, but there is diminished caudad motion of ribs 6-7 on the left. What is the predominant rib motion of this patient's somatic dysfunction?
- A. left-sided dysfunction, bucket handle motion predominant
 - B. left-sided dysfunction, caliper motion predominant
 - C. left-sided dysfunction, pump handle motion predominant
 - D. right-sided dysfunction, bucket handle motion predominant
 - E. right-sided dysfunction, caliper motion predominant
- 195.** A 38-year-old man presents to the office with an 8-month history of upper back pain. He denies any radiation of the pain, numbness, or tingling. Structural examination reveals that ribs 3-4 move equally on the right and left during exhalation, but there is reduced motion on the left during inhalation. What is this patient's most likely rib diagnosis?
- A. exhalation dysfunction at ribs 3-4 on the left
 - B. exhalation dysfunction at ribs 3-4 on the right
 - C. inhalation dysfunction at ribs 3-4 bilaterally
 - D. inhalation dysfunction at ribs 3-4 on the left
 - E. inhalation dysfunction at ribs 3-4 on the right
- 196.** A 32-year-old woman presents to the office with a 3-day history of acute left-sided low back pain. She denies any numbness, tingling, or radiation. Neurologic examination of the lower extremities reveals normal findings. Structural examination reveals a positive standing flexion test result on the left. The ASIS is superior on the right, and the PSIS is superior on the left. When treating this patient's somatic dysfunction using postisometric relaxation muscle energy, which muscle provides the activating force?
- A. left semitendinosus
 - B. left vastus lateralis
 - C. right rectus femoris
 - D. right semimembranosus
 - E. right vastus medialis

- 197.** A 43-year-old man presents to the office with a 2-week history of neck pain. He denies any numbness or tingling. Neurologic examination findings are normal. Structural examination reveals an articular pillar at C4 on the right that remains prominent in neutral and flexion. To treat this patient's somatic dysfunction with high velocity, low amplitude emphasizing the rotational component of the diagnosis, what is the most appropriate patient positioning?
- A. left rotation only
 - B. left sidebending and left rotation
 - C. left sidebending and right rotation
 - D. right sidebending and left rotation
 - E. right sidebending and right rotation
- 198.** A 21-year-old woman presents to the office with a 4-day history of back pain. She describes the pain as dull and throbbing. She denies any numbness or tingling. Structural examination reveals a posterior transverse process at T6 on the right, convexity on the left, and worsening of this prominence in extension and neutral. To treat this patient's somatic dysfunction with high velocity, low amplitude, the patient's trunk should be positioned in which of the following directions?
- A. extension with left sidebending and left rotation
 - B. extension with right sidebending and right rotation
 - C. flexion with left sidebending and left rotation
 - D. flexion with right sidebending and right rotation
 - E. neutral with right rotation and left sidebending
- 199.** A 44-year-old man presents to the office with a 2-week history of right-sided low back pain. He reports some radiation of the pain into his right leg that stops before reaching his knee. Neurologic examination of the lower extremities reveals normal findings. Structural examination reveals restriction in rotation to the left at L2. This restriction remains in flexion and neutral. To treat this patient's lumbar somatic dysfunction with supine high velocity, low amplitude, what is the most appropriate initial positioning of the patient's lumbar spine?
- A. extension with left sidebending and left rotation
 - B. extension with right sidebending and right rotation
 - C. flexion with left sidebending and left rotation
 - D. flexion with right sidebending and right rotation
 - E. neutral with left rotation and left sidebending

- 200.** A 25-year-old woman presents to the emergency department with left-sided chest wall pain after a motor vehicle collision. The patient was the driver and rear-ended the car in front of her at 20 mph. She was wearing a seat belt with the shoulder harness in place. She says that the pain is localized just below her left breast and is exacerbated with inhalation. Radiographs are negative for fracture. Structural examination reveals that ribs 6-8 on the left have increased motion on exhalation and less motion on inhalation compared to ribs 6-8 on the right. When utilizing muscle energy to correct this patient's somatic dysfunction, which of the following muscles is engaged?
- A. left middle scalene
 - B. left pectoralis minor
 - C. left serratus anterior
 - D. right external intercostal
 - E. right quadratus lumborum
- 201.** A 34-year-old patient undergoes an abdominoplasty and mastopexy. In the immediate postoperative period, how would osteopathic manipulative treatment aid in this patient's recovery?
- A. creating more edema to reduce bleeding
 - B. decreasing parasympathetic activity to reduce ileus
 - C. enhancing sympathetic activity to promote peristalsis
 - D. improving lymphatic and blood flow to promote healing
 - E. increasing fascial stress to reinforce wound closure
- 202.** According to the U.S. Preventive Services Task Force (USPSTF), it is most appropriate to screen which of the following patients for lung cancer with a CT scan of the chest?
- A. 47-year-old man who has smoked a pack per day since age 17 and continues to smoke
 - B. 53-year-old man who smoked half a pack per day from ages 20 to 40 and then quit
 - C. 56-year-old man who has smoked a pack per day since age 16 and continues to smoke
 - D. 80-year-old woman who smoked a pack per day from age 18 and quit 17 years ago
 - E. 84-year-old woman who has smoked half a pack per day since age 18 and continues to smoke

- 203.** A 42-year-old man presents to the office with a 4-week history of right foot pain. He reports severe pain at the bottom of his foot in the morning when he gets out of bed that gets progressively better as he walks around during the day. Examination of the right lower extremity reveals tenderness at the medial calcaneal border and a tender point at the quadratus plantae. Radiography of the right foot is ordered. Which of the following findings is most likely to be seen on this patient's radiographs?
- A. accessory ossicle medial to the navicular
 - B. avulsion fracture of the fifth metatarsal
 - C. calcaneal spur
 - D. lateral displacement of the second metatarsal base
 - E. stress fracture of the navicular
- 204.** A 35-year-old woman presents to the office with a 3-week history of feelings of sadness, lack of energy, and decreased libido. History reveals that she gave birth 8 weeks ago and is not breastfeeding. She reports that she is eating and smoking more than she did before her pregnancy. The most appropriate treatment is
- A. aripiprazole (Abilify®)
 - B. cyclobenzaprine (Flexeril®)
 - C. doxepin (Sinequan®)
 - D. sertraline (Zoloft®)
 - E. valproic acid (Depakote®)
- 205.** A 30-year-old gravida 2 para 2 woman who is 4 weeks postpartum presents to the office for evaluation of mild pelvic pain that worsens with ambulation. She denies radiation of the pain to her back or lower extremities. Physical examination findings are normal. Structural examination reveals a positive standing flexion test result on the right and a superior pubic symphysis on the right. The most appropriate next step in this patient's management is to
- A. advise against pregnancy support belts since they have not been found to be beneficial
 - B. delay osteopathic manipulative treatment since treatment too early in the postpartum period may exacerbate the patient's pain
 - C. order radiography of the pelvis to assess for widening of the pubic symphysis
 - D. suggest more weight gain for future pregnancies since delivering an infant that is small for gestational age increases the risk of this complication
 - E. with the patient supine, apply a gentle high velocity, low amplitude tug directed inferiorly using the right leg to treat the dysfunction

- 206.** A 31-year-old woman presents to the office for evaluation of periods of severe depression. Past medical history reveals bipolar disorder. She takes lithium (Eskalith®), which has kept her mania under good control for over a year. The most appropriate next step in management is
- A. aripiprazole (Abilify®) 10 mg
 - B. carbamazepine (Tegretol®) 100 mg
 - C. clonazepam (Klonopin®) 0.5 mg
 - D. escitalopram (Lexapro®) 10 mg
 - E. propranolol (Inderal®) 20 mg
- 207.** A 50-year-old woman presents to the emergency department with the concern of severe pain after she fell yesterday. Radiographs reveal an L4 compression fracture. Which of the following is an indication for emergency surgery for this patient?
- A. absent patellar reflex
 - B. acute sensory deficit of the lateral thigh
 - C. fecal incontinence
 - D. new-onset dysuria and urgency
 - E. new-onset footdrop
- 208.** A 45-year-old man presents to the office for a follow-up evaluation after repeat laboratory studies revealed a fasting blood glucose level of 180 mg/dL (reference range: 74-106 mg/dL) and a hemoglobin A1c level of 8.2% (reference range: 4.0-5.6%). He has been treated for type 2 diabetes for the past 2 years. He takes metformin (Glucophage®) 1,000 mg twice daily. He reports exercising most days of the week and following a prescribed diet, but his body mass index remains at 30 kg/m². The most appropriate recommendation to help this patient achieve his glycemic goals, lose weight, and avoid hypoglycemia is to prescribe
- A. a sulfonylurea
 - B. a glucagon-like peptide-1 receptor agonist
 - C. long-acting basal insulin once daily
 - D. short-acting insulin with meals
 - E. split-dose long-acting basal insulin twice daily

- 209.** What is the recommendation for timing of a comprehensive dilated eye examination performed by an ophthalmologist or optometrist in an adult patient with type 1 diabetes?
- A. after hemoglobin A1c level is under 6.0%
 - B. after hemoglobin A1c level is under 7.0%
 - C. at the time of diagnosis
 - D. within 5 years of diagnosis
 - E. within 7 years of diagnosis
- 210.** A 35-year-old woman presents to the emergency department with the concern of acute neck pain 1 hour after she was involved in a motor vehicle collision. Before osteopathic manipulative treatment is used, which of the following studies is most appropriate to rule out a cervical fracture or dislocation in this patient?
- A. CT scan with contrast
 - B. electromyography
 - C. MRI
 - D. radiography
 - E. ultrasonography
- 211.** Knowing the absolute contradictions of high velocity, low amplitude, which of the following cervical spine conditions is a relative contraindication for treatment with this technique?
- A. acute radiculopathy
 - B. joint fusion
 - C. joint infection
 - D. joint instability
 - E. malignancy
- 212.** What is the most appropriate duration for monitoring a tender point associated with a rib using counterstrain technique?
- A. 3 to 5 seconds
 - B. 30 seconds
 - C. 60 seconds
 - D. 90 seconds
 - E. 120 seconds

213. A 55-year-old man presents to the emergency department with the concerns of left arm numbness and mild low back pain. History reveals that he fell off a ladder this morning and landed on his neck and lower back. He denies bowel or bladder problems and headache. Neurologic examination reveals:

- Sensory loss in the C5-C6 dermatomes on the left
- 2/5 grip strength in the dominant left hand
- +3/4 deep tendon reflexes in the left upper extremity

Structural examination reveals:

- Mild muscle spasm in the cervical spine
- C3 flexed, rotated right, sidebent right
- Anterior C3 tender point
- Elevated rib 1 on the left
- Mild muscle spasm in the lumbar spine
- L3-L5 rotated right, sidebent left

Radiographs of the cervical spine reveal normal findings. No radiographs of the lumbar spine are obtained. The most appropriate management of this patient is to

- A. consult a neurosurgeon for cervical myelopathy on an urgent basis and start steroids
- B. order an MRI of the lumbar spine to rule out L5 herniated nucleus pulposus
- C. order radiography of the lumbar spine prior to using high velocity, low amplitude on the lumbar region
- D. treat the anterior cervical tender point prior to treating the rib and lumbar spine
- E. treat the rib 1 dysfunction prior to treating the cervical spine and lumbar region

214. A 30-year-old woman presents to the office for evaluation of right-sided facial pain that is worse in the morning after waking. Her spouse has told her that she grinds her teeth and clenches her jaw at night while asleep. Physical examination reveals tension in the right masseter and pterygoids and a deviation to the right on opening of the mandible. After completing osteopathic manipulative treatment to the pterygoids and masseter, there is decreased tension to the area, but mandibular deviation and right-sided facial pain remain. Which additional muscle is most likely causing her pain and should be evaluated and treated to reduce the pain?

- A. digastric
- B. frontalis
- C. mylohyoid
- D. omohyoid
- E. temporalis

- 215.** A 46-year-old woman presents to the office for a follow-up evaluation of chronic headaches and upper back pain. She reports daily headaches and difficulty sleeping. She is tearful and frustrated. She has been treated with analgesics, muscle relaxants, and mood stabilizers without relief. Recent laboratory study results are normal. You decide to administer the Adverse Childhood Experiences Questionnaire, and the patient's score is 6/10. By administering the Adverse Childhood Experiences Questionnaire, which tenet of osteopathic medicine have you applied?
- A. care should enhance quality of life and performance
 - B. overall wellness can be achieved without drugs or surgery
 - C. structure and function are interrelated at all levels
 - D. the body possesses self-regulatory mechanisms that are self-healing in nature
 - E. the human being is a dynamic unit of function
- 216.** A 72-year-old woman presents to the office with the concern of low back pain. She reports achy left-sided back pain at the level of L2-L3 that has been worse over the past 3 weeks. She says that it is worse as the day goes on and after playing tennis but does not awaken her at night. She reports no radiation of the pain and denies loss of bowel or bladder function. On examination, there is no midline tenderness. What is the most appropriate next step?
- A. high velocity, low amplitude to the left innominate
 - B. MRI of the lumbar spine
 - C. muscle energy to the lumbar spine
 - D. radiography of the lumbar spine
 - E. radiography of the pelvis
- 217.** A 42-year-old woman is recovering in the hospital 1 day after an exploratory laparotomy and lysis of adhesions. She has had no flatus or bowel movements. A nasogastric tube remains in place. On examination, the abdomen is moderately distended and tender, especially near the incision lines. Urine output and respiratory rate are normal. To aid the edema in her colon, the 2 most high-yield areas to initially screen and address are the
- A. abdominal wall and popliteal diaphragm
 - B. OA junction and thoracic inlet
 - C. pelvic diaphragm and abdominal wall
 - D. thoracic inlet and thoracoabdominal diaphragm
 - E. thoracoabdominal diaphragm and pelvic diaphragm

218. Regarding osteopathic manipulative treatment, the most appropriate treatment to resolve ileus in a postoperative small-bowel resection patient is to

- A. start laxative medications and intestinal prokinetic/promotility medication
- B. treat L3-L5 and the upper cervical regions
- C. treat T12-S2 and perform a pedal pump
- D. treat T5-T7 and dome the diaphragm
- E. treat T8-T10 and release the OA

219. A 73-year-old man is evaluated on postoperative day 6 after undergoing a coronary artery bypass graft. He reports sharp, right-sided, midchest pain that began immediately after the surgery and worsens with breathing. It is painful to take a deep breath. Structural examination reveals:

- Thoracic inlet restriction on the right
- Inhalation dysfunction at rib 6 on the right
- T5 flexed, rotated right, sidebent right
- T12 flexed, rotated left, sidebent left
- Sternum flexed, rotated right, sidebent right

In applying osteopathic manipulative treatment, which dysfunction is most appropriate to treat first?

- A. inhalation dysfunction at rib 6 on the right
- B. sternum flexed, rotated right, sidebent right
- C. T12 flexed, rotated left, sidebent left
- D. T5 flexed, rotated right, sidebent right
- E. thoracic inlet restriction on the right

220. Physical examination of a 2-day-old neonate reveals a yellow hue to the skin and conjunctivae. In a neonate with no perinatal complications, the most likely diagnosis on the differential list is

- A. Gilbert syndrome
- B. hemolysis
- C. hypothyroidism
- D. physiologic hyperbilirubinemia
- E. sepsis

- 221.** Which of the following athletes should be disqualified from participating until further evaluation?
- A. a 14-year-old boy who passed out 2 times with heavy exertion going out for track
 - B. a 15-year-old boy with a history of seizures going out for gymnastics
 - C. a 15-year-old girl with a body mass index of 27 kg/m² going out for basketball
 - D. a 16-year-old boy with one testicle going out for basketball
 - E. a 16-year-old girl who has not had a menstrual period going out for field hockey
- 222.** A patient presents to the office with a 6-week history of shoulder pain. Structural examination reveals limited active range of motion of the shoulder in internal rotation and pain with the scapular lift-off test. The most appropriate muscle to target to improve this patient's range of motion is the
- A. infraspinatus
 - B. pectoralis minor
 - C. subscapularis
 - D. supraspinatus
 - E. teres minor
- 223.** A 14-year-old boy presents to the office with a 5-day history of a respiratory infection. Past medical history reveals asthma. He has a cough productive of clear sputum, and he has been experiencing increasing tightness in his chest. His peak flow is 50% of predicted. Prior to the cold, he was using his albuterol (Ventolin®) inhaler only once or twice per month, but now he is using it multiple times per day. He reports no cigarette smoking. The most appropriate next step is to
- A. add a leukotriene receptor antagonist to his treatment regimen
 - B. add inhaled cromolyn (Intal®) to his treatment regimen
 - C. change the albuterol (Ventolin®) to salmeterol (Serevent®)
 - D. prescribe a 5-day course of macrolide antibiotics
 - E. prescribe a 5-day course of oral corticosteroids

- 224.** A new patient presents to the office for a health maintenance examination. She reports that she is so glad she found you because "all the other doctors out there are no good." She compliments your appearance and states that she is certain you are going to cure her abdominal pain. The most likely diagnosis is
- A. borderline personality disorder
 - B. conversion reaction
 - C. histrionic personality disorder
 - D. reaction formation
 - E. sociopathic personality disorder
- 225.** A 42-year-old man presents to the office for a health maintenance examination. He has not seen a physician in several years, and he has not received any vaccinations since childhood. Review of systems is normal, and physical examination findings are normal. Which of the following preventive services is most appropriate to offer to this patient?
- A. chest radiography
 - B. complete blood count
 - C. lipid profile
 - D. liver function studies
 - E. urinalysis
- 226.** A 75-year-old man is brought to the office by his son with a 2-month history of staring into space. The son reports that the patient, with whom he lives, is very unsteady when moving around the house and has fallen several times. He has been very depressed, is drooling, has difficulty swallowing, and is losing weight. His supine blood pressure is 140/90 mmHg, and his standing blood pressure is 100/70 mmHg. On examination, he has a slow, shuffling gait and walks in a stooped-over position. Marked rigidity of the upper extremities and a tremor that appears to be present only at rest are noted. The most common presenting symptom in this disorder is
- A. depression
 - B. gait disturbance
 - C. orthostatic hypotension
 - D. rigidity
 - E. tremor

227. A 33-year-old woman has a Pap smear finding of atypical glandular cells. What is the most appropriate next step?
- A. colposcopy and endocervical curettage
 - B. loop electrosurgical excision procedure
 - C. referral to a gynecologic oncologist
 - D. repeat Pap smear in 3 months utilizing ThinPrep® methodology
 - E. repeat Pap smear in 6 months
228. According to the Centers for Disease Control and Prevention (CDC), the recommended first-line treatment for *Chlamydia trachomatis* urogenital infection is
- A. intramuscular ceftriaxone (Rocephin®) 250 mg single dose
 - B. oral doxycycline (Vibramycin®) 100 mg twice daily for 7 days
 - C. oral erythromycin (Mycin®) 500 mg 4 times daily for 7 days
 - D. oral levofloxacin (Levaquin®) 500 mg twice daily for 7 days
 - E. oral ofloxacin (Floxin®) 300 mg twice daily for 7 days
229. Which of the following agents have been shown in clinical trials to decrease mortality in patients with systolic dysfunction?
- A. angiotensin-converting enzyme inhibitors
 - B. calcium channel blockers
 - C. digitalis glycosides
 - D. diuretics
 - E. long-acting nitrates

230. A 38-year-old man presents to the office for a follow-up evaluation after recent laboratory studies revealed:

Test	Patient's Value	Reference Range
Fasting glucose, serum	195 mg/dL	74-106 mg/dL
Hemoglobin A1c	7.3%	4.0-5.6%
BUN	18 mg/dL	6-20 mg/dL
Creatinine	1.10 mg/dL	0.62-1.10 mg/dL
Total cholesterol	195 mg/dL	< 200 mg/dL
HDL cholesterol	42 mg/dL	40-60 mg/dL
LDL cholesterol	118 mg/dL	< 100 mg/dL

His medications are lisinopril (Zestril®) 5 mg daily, pravastatin (Pravachol®) 20 mg daily, and glimepiride (Amaryl®) 2 mg daily. His blood pressure is 148/92 mmHg. Over the past 6 months, his in-office readings were consistent and similar. According to the Eighth Joint National Committee (JNC 8), what is the most appropriate next step in the management of this patient's blood pressure?

- A. increase lisinopril (Zestril®) to achieve a blood pressure goal of less than 140/90 mmHg
 - B. no treatment since he is at his blood pressure goal
 - C. recheck blood pressure in 2 weeks and encourage lifestyle modifications
 - D. recheck blood pressure in 3 months and encourage lifestyle modifications
 - E. reduce lisinopril (Zestril®) to 2.5 mg daily and add a thiazide diuretic to maintain similar blood pressures
231. Which of the following is the ethical standard of care when physicians discharge a patient from their practice?
- A. calling the patient to explain the discharge
 - B. providing a physical copy of the patient's chart
 - C. providing emergency care for the next 30 days
 - D. referring the patient to a new physician
 - E. reviewing the patient's billing account

232. A 12-year-old girl is brought to the office by her mother for evaluation of heavy menstrual bleeding. Menarche was 5 months ago. From the start of her menstrual periods, her flow was very heavy, requiring her to change pads every hour. Her menses occur every 28 to 30 days and last 10 to 14 days. Premenstrual symptoms of bloating and breast tenderness, along with mild menstrual cramps and fatigue, are noted. Past medical history is significant for frequent nosebleeds. The mother says that she did not worry at first because her own periods were heavy. Vital signs reveal a blood pressure of 100/60 mmHg and a resting heart rate of 105/min. On examination, her skin is pale, warm, and dry with no petechiae. Abdominal examination findings are normal, and the remainder of the examination findings are also normal. The most likely diagnosis is

- A. acute lymphocytic leukemia
- B. anovulatory cycles
- C. hypothyroidism
- D. pituitary adenoma
- E. von Willebrand disease

233. A 50-year-old man presents to the office for a physical examination prior to receiving a commercial driver's license. Urinalysis reveals red blood cell casts (reference range: negative), but the results are otherwise normal. Which of the following is the most likely cause of this patient's results?

- A. intrinsic renal disease
- B. normal variant
- C. renal calculus
- D. sickle cell hemoglobinopathy
- E. urinary tract infection

234. A 32-year-old woman presents to the office with the concerns of weakness and episodes of blurred vision. She says that she has to lift her legs with her hands to enter her minivan. Prior laboratory study results were normal. Vital signs are normal. On examination, the patient appears ill. A Babinski sign is present on the left, and subtle bilateral ophthalmoplegia is noted. What is the most appropriate next step in the evaluation of this patient?

- A. 3-phase bone scan
- B. CT scan of the head with and without contrast with attention to the cerebellum
- C. electromyography
- D. erythrocyte sedimentation rate
- E. MRI of the brain and spinal cord

235. A 72-year-old woman presents to the office for an annual health maintenance examination. Past medical history is significant for osteoporosis and hypertension. Laboratory studies reveal a calcium level of 8.2 mg/dL (reference range: 8.6-10.2 mg/dL) and a 25-hydroxy vitamin D level of 10 ng/mL (reference range: 15-80 ng/mL). The most appropriate next step in the management of this patient is to

- A. advise that no treatment is necessary at this time
- B. recommend calcium citrate 1,200 mg daily
- C. recommend oral vitamin D₂ 50,000 IU once weekly for 8 weeks
- D. recommend serial monitoring of calcidiol and calcium levels
- E. recommend sun exposure for 15 minutes every day

236. A 43-year-old woman presents to the office for an annual health maintenance examination. She has no concerns. Past medical, family, and social histories are unremarkable. Vital signs reveal:

Blood pressure	115/72 mmHg
Heart rate	76/min
Respiratory rate	14/min

Her body mass index is 24 kg/m². Physical examination findings are normal. Recent laboratory studies performed through her employer reveal:

Test	Patient's Value	Reference Range
Total cholesterol	97 mg/dL	< 200 mg/dL
LDL cholesterol	75 mg/dL	< 100 mg/dL
Fasting glucose	88 mg/dL	74-106 mg/dL
Thyroid-stimulating hormone	7.6 mIU/mL	0.4-4.2 mIU/mL
Free thyroxine	1.4 ng/dL	0.8-2.7 ng/dL

The most likely diagnosis is

- A. Graves disease
- B. Hashimoto thyroiditis
- C. iodine deficiency
- D. Sheehan syndrome
- E. subclinical hypothyroidism

237. A 54-year-old man presents to the office with a 10-week history of weakness, fatigue, hemoptysis, and an unintentional 11-kg (25-lb) weight loss. He also reports worsening dyspnea. Past medical history is unremarkable. He has a 65 pack-year history of cigarette smoking. Vital signs reveal:

Temperature	37.6°C (99.7°F)
Blood pressure	170/96 mmHg
Heart rate	82/min
Respiratory rate	12/min
Oxygen saturation	94% on room air

Physical examination reveals purple stretch marks on the abdomen and diffuse bruising of the skin. Laboratory studies reveal:

Test	Patient's Value	Reference Range
Potassium, serum	2.8 mEq/L	3.5-5.1 mEq/L
Random glucose	230 mg/dL	70-125 mg/dL
Leukocyte count	$14.0 \times 10^3/\text{mcL}$	$4.5\text{-}11.0 \times 10^3/\text{mcL}$

A chest radiograph reveals a 3-cm central lesion in the right hilum and apparent mediastinal lymph node enlargement. The most likely diagnosis is

- A. acromegaly
- B. adrenal insufficiency
- C. Cushing disease
- D. paraneoplastic syndrome
- E. pheochromocytoma

- 238.** A 22-year-old gravida 6 para 3-0-2-3 woman at 5 weeks' gestation is diagnosed with hyperthyroidism secondary to Graves disease. Her current and past pregnancies have all been unremarkable. You decide to prescribe her an antithyroid medication. Which of the following medication and trimester pairings is recommended?
- A. methimazole (Tapazole®) for the first and second trimesters and propylthiouracil (Propacil®) for the third trimester
 - B. methimazole (Tapazole®) for the first trimester and propylthiouracil (Propacil®) for the second and third trimesters
 - C. methimazole (Tapazole®) for the first, second, and third trimesters
 - D. propylthiouracil (Propacil®) for the first trimester and methimazole (Tapazole®) for the second and third trimesters
 - E. propylthiouracil (Propacil®) for the first, second, and third trimesters
- 239.** A 44-year-old woman presents to the office with the gradual onset of fatigue, abdominal pain, steatorrhea, and pruritus. Past medical history is significant for hypothyroidism. Physical examination reveals normoactive bowel sounds and an enlarged liver. Laboratory studies reveal an elevated alkaline phosphatase level, an elevated 5'-nucleotidase level, and a positive antimitochondrial antibody test result. The most likely diagnosis is
- A. autoimmune hepatitis
 - B. Banti syndrome
 - C. hemochromatosis
 - D. metastatic colon carcinoma
 - E. primary biliary cholangitis
- 240.** A 78-year-old man presents to the office with a 3-day history of gradually worsening nausea and midabdominal pain. He denies rectal bleeding or weight loss. His temperature is 38.0°C (100.4°F). Abdominal examination reveals left lower quadrant fullness and tenderness without rebound. His leukocyte count is $11.2 \times 10^3/\text{mCL}$ (reference range: $4.5\text{--}11.0 \times 10^3/\text{mCL}$). The most likely diagnosis is
- A. acute cholecystitis
 - B. acute diverticulitis
 - C. acute pancreatitis
 - D. irritable bowel syndrome
 - E. small-bowel obstruction

- 241.** A 32-year-old woman presents to the office with a 3-day history of diffuse, foul-smelling, watery diarrhea. The patient recently received treatment for streptococcal pharyngitis with cefdinir (Omnicef®). Rectal examination reveals no masses. A fecal occult blood test result is negative. Which of the following tests is most appropriate to order to confirm the suspected diagnosis?
- A. *Clostridioides difficile* stool culture
 - B. *Clostridioides difficile* toxin stool test
 - C. fecal calprotectin test
 - D. fecal elastase test
 - E. ova and parasite stool test
- 242.** A 28-year-old primigravid woman at 10 weeks' gestation based on a good first day of last menstrual period date presents to the office with a 2-day history of vaginal bleeding that is lighter than a period. On sterile speculum examination, the cervical os is closed, but there is a small amount of bright red blood in the vaginal vault. A stat ultrasound confirms heart activity and her dates. What is the most appropriate next step in this patient's management?
- A. initiate progesterone or synthetic progestin treatment
 - B. obtain an HCG level and complete blood count
 - C. obtain maternal blood type
 - D. recommend bed rest
 - E. recommend limited physical activity
- 243.** A 28-year-old woman presents to the office for preconception counseling. She is hoping to conceive as soon as possible. Her only medication is lisinopril (Prinivil®) for hypertension, which is controlling her blood pressure. The most appropriate action regarding her current medication is to
- A. continue the lisinopril (Prinivil®)
 - B. discontinue all antihypertensives
 - C. discontinue lisinopril (Prinivil®) and begin furosemide (Lasix®)
 - D. discontinue lisinopril (Prinivil®) and begin losartan (Cozaar®)
 - E. discontinue lisinopril (Prinivil®) and begin methyl dopa

244. In which of the following patients would muscle energy most likely be indicated?

- A. 2-year-old boy with persistent mild left ankle pain after he everted his ankle when stepping into a hole 2 weeks ago
- B. 22-year-old woman with significant right ankle pain, swelling, and bruising after she everted her ankle this morning during her routine run
- C. 65-year-old man with a 6-week history of neck pain that has not responded to over-the-counter medications
- D. 70-year-old man with low back pain who has severe cognitive impairment
- E. 75-year-old thin-appearing woman with a 2-month history of nighttime rib pain, recent unintentional 4.5-kg (10.0-lb) weight loss, and no known injury

245. A 29-year-old woman has been taking alprazolam (Xanax®) 5 mg every 4 to 6 hours for several years. History reveals that she has been receiving 1- to 2-mg doses from several physicians. She believes that she has become addicted and wants to discontinue the medication. She has a history of an anxiety disorder but no other medical conditions. She requests outpatient therapy if possible and has established a relationship with a counselor. She is also participating in Narcotics Anonymous (NA). The most appropriate management is to

- A. discontinue alprazolam (Xanax®), prescribe clonazepam (Klonopin®) 1 mg every 6 hours with a plan to taper over 2 weeks along with a selective serotonin reuptake inhibitor, and follow up in 2 to 3 days
- B. prescribe paroxetine (Paxil®) 20 mg daily for her anxiety, discontinue alprazolam (Xanax®), and follow up in 1 week
- C. recommend inpatient therapy due to the high dose and long duration of alprazolam (Xanax®) use
- D. recommend that she continue attending NA meetings and counseling and discontinue alprazolam (Xanax®) use immediately
- E. taper off alprazolam (Xanax®) over the course of 6 to 10 weeks or longer, initiate a selective serotonin reuptake inhibitor, and follow up in 1 week